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Government
Publications

Ontario
Dept. of Highways
Report

ONTARIO

Annual Report

OF THE

Department of Highways

ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

1962

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

SESSIONAL PAPER NO. 20

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1962

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To The Honourable John Keiller Mackay,
D.S.O., V.D., LL.D.,
Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1962.

Respectfully submitted,

Wm. A. Goodfellow,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
December 31, 1962.

To The Honourable Wm. A. Goodfellow,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1962.

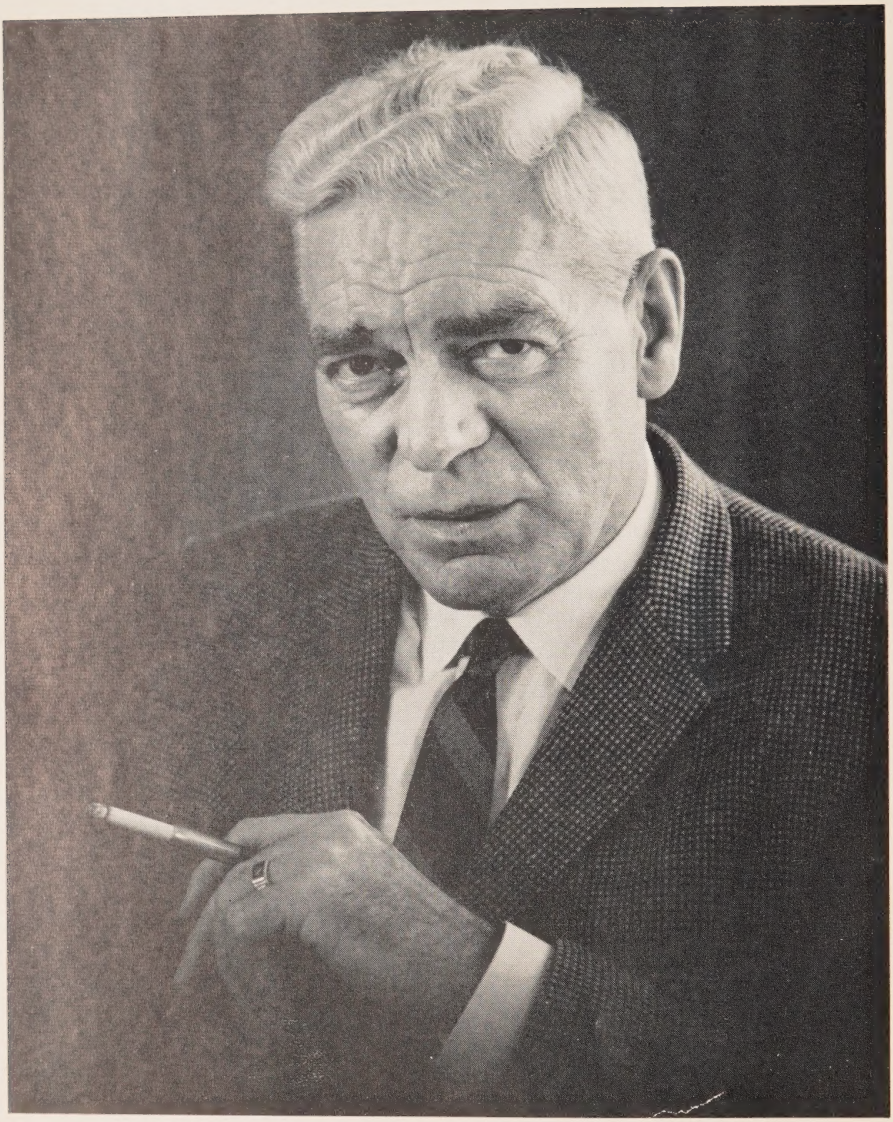
The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

W. J. Fulton,
Deputy Minister.

Department of Highways, Ontario,
December 21, 1962.



Honourable W. A. Goodfellow, Minister of Highways.

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SUMMARY REPORT OF DEPARTMENT OPERATIONS

by W. J. FULTON, P.Eng., *Deputy Minister of Highways*

During the 1961–62 fiscal year the Department carried out a comprehensive program of maintaining Ontario's high standards of up-keep for existing highways and extending the highway system throughout the Province. Highlighting this program are such major projects as the Homer Skyway, the Rainy Lake Causeway, further improvements along the route of the Trans-Canada Highway and the construction of four-lane, controlled-access highways of the same standard as Highway 401, namely Highways 403 and 405, both of which will form an integral link with the Queen Elizabeth Way.

Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	Fiscal Year Ending March 31, 1962	Fiscal Year Ending March 31, 1961
Gross capital payments on construction of King's Highways and Secondary Highways	$131,833,293	$133,324,014
Less: Recoveries on (1) Trans-Canada Highway, (2) Ottawa Queensway, (3) Railway Bridges, (4) Niagara Falls Bridge Commission, (5) City of Ottawa	16,200,809	19,813,586
Net capital payments on construction of King's Highways and Secondary Highways	$115,632,484	$113,510,428
Ordinary expenditure on King's Highways and Secondary Highways including maintenance and general operating expense	46,998,312	44,679,159
Provincial subsidies on municipal roads and streets and cost of development roads and roads in unincorporated townships	80,607,404	79,804,430
Total Net Expenditures	$243,238,200	$237,994,017

During the year 75 miles of Highway 401 were completed and opened to traffic. With this addition, the total mileage of Highway 401 now in use is 377 miles. At the end of the year construction was in progress on all uncompleted sections of Highway 401 with a view to opening the 510-mile expressway, from border to border, in 1963.

The second stage of the $35 million Ottawa Queensway — a four-and-a-half mile section at the western end of Ottawa — was completed and opened to traffic in October.

On the main Ontario route of the Trans-Canada Highway, more than 180 miles of existing highway were reconstructed to meet or better the standards set for this highway by the Dominion Government and 15 new bridges were completed and opened to traffic.

Work continues on the province's second skyway, located near St. Catharines, carrying the Queen Elizabeth Way over the Welland Canal. The first steel of the superstructure for this $19-million project was erected last July.

Widening of the Queen Elizabeth Way to six lanes from Highway 27 to Highway 10 was completed in December.

In the late summer and early fall of 1961, contracts were awarded for the construction of a new four-lane, controlled-access Highway in the Niagara Peninsula, known as Highway 405. This new Highway will connect the Queen Elizabeth Way with the Queenston-Lewiston International bridge, now under construction.

By the end of the year 7.9 miles of Highway 403 in the vicinity of Hamilton were under construction.

The department's long-term paving program on Highway 11, the "Northern Route" of the Trans-Canada Highway, between Longlac and Cochrane was completed. Over all of these 267 miles there is now a paved surface.

A new 44-mile Secondary Highway, No. 637, completed in November, ended the virtual isolation of the picturesque hamlet of Killarney on Georgian Bay, formerly accessible only by water, or air.

Construction of the Rainy Lake Causeway continued according to schedule and by the end of the year the high-level bridge was more than 50 per cent completed. It is expected that this $6-million project will be open for traffic by the end of 1962.

During 1961 a total of 186 miles of existing roads of various types was incorporated into the provincial highway system.

In April automatic toll machines were introduced at the Burlington Bay Skyway on a trial basis.

In November the Government announced its intention to establish service facilities on Highway 401. Initial plans call for eight service areas to be located at strategic points between London and Marysville.

Maintenance of Ontario's more than 12,000 miles of King's Highways and Secondary Highways remains one of the department's most challenging and complex jobs. During 1961 the Department's mobile radio communication system was expanded to cover most of southern Ontario with about 300 mobile units. The instantaneous, on-the-spot reports which the system makes possible has year-round advantages for the Department but its benefits for motorists are greatest in the winter months as it speeds, by many hours, the work of winter maintenance crews in keeping the highways clear and in the safest possible travelling condition.

As of March 31, 1962, our highway system included 9,436 miles of King's highways and 2,687 miles of Secondary highways — a total of 12,123.

Contracts Completed

During 1961-62 capital contracts were completed on 825 miles of grading, 753 miles of hot mix paving and 164 structures. Completed capital contracts totalled 238 and maintenance contracts totalled 147.

Some 206 capital contracts and 161 ordinary (maintenance) contracts were awarded in 1961-62. New capital work included 677 miles of grading, 379 miles of hot mix paving and 78 structures of various types. Maintenance contracts covered 17 for hot mix patching, 13 for surface treatment and 20 for winter sanding.

Index

The index of tender prices paid on road contracts fell during the year, indicating somewhat lower unit prices. The index was 112.3 for 1961-62 as compared with 124.2 in 1960-61 and the ten-year high of 156.8 in 1956-57.

The index of prices for road materials purchased by the Department decreased from 117.2 in 1960-61 to 113.9 in 1961-62.

Information Section

R. G. Baigent, Information Officer

The Information Section is the principal source of information for the public and the news media on the over-all work of the Department.

Throughout the year, as a regular activity, news releases and fact sheets on a wide range of subjects, photos and special maps were distributed to newspapers, radio and television stations in Ontario and, on occasion, to neighbouring American states as well as to trade and other magazines. While the greater percentage of releases and related material was concerned with the opening of new highway construction, the release subjects represented a considerable diversity. Some 80-odd separate releases and fact sheets were prepared for general distribution during the fiscal year. Over and above these, considerable material was distributed on a selective basis. The total output was a record over previous years by a goodly margin. In addition to the substantial increase in the number of press releases and related material prepared and distributed, more official opening ceremonies were arranged than in any one previous year.

One feature of the arrangements made for the official openings was the broadening of a new policy in which corporations at the local level, such as chambers of commerce and similar groups were encouraged to take an active part in the planning and carrying out of the program for such events, guided by the Department's District Engineers and the Information Section.

Two important press conferences were held. The first at the Downsview Headquarters on October 3, when the Department's plans for three major projects were announced: widening of sections of the Toronto By-pass portion of Highway 401; a proposed new freeway, Highway 404, from Toronto to Newmarket, and provisions for high-speed road connections to Toronto International Airport.

The use of large blow-ups of aerial photos, on which the proposed projects had been superimposed, facilitated explanation of pertinent features. Following the press conference, representatives from press, radio, TV and Departmental

personnel flew over the route of Highway 401 to be widened and over the proposed Highway 404.

Another notable press conference was held before the Minister's presentation of the Highway Estimates for the following fiscal year. As usual, this was well attended and excellent press coverage was obtained.

As in the past, special articles were requested and prepared for newspapers and magazines, and illustrations selected. The Information Section also served as liaison between outside writers and key D.H.O. personnel. Too, the Section did extensive research and ghost writing for Canadian and foreign writers.

Requests for information originating within the Department itself and other departments of government — both Provincial and Dominion — were numerous, some requiring detailed and extensive reports.

As part of the training courses held at Headquarters, the Information Section's staff lectured regularly on practical Public Relations as created by D.H.O. employees in their daily work.

Format and editorial policy of the Department's employee magazine, the D.H.O. News, were revised and improved in March, 1962. Under the new policy the magazine will deal more with personalities and items of human interest than with construction and engineering accomplishments.

Before the peak holiday season the Department released the first 100,000 copies of an entirely new folder entitled "Picnicking/Camping via Ontario Highways." This folder contained a pictorial map of the province showing hundreds of picnic spots, provincial parks and other recreational features. Conceived by the Department of Highways, the folder was prepared in co-operation with the departments of Travel and Publicity, Lands and Forests, and Commerce and Development. The Information Section's publicity for the new folder created a brisk demand. As an example, 70,000 copies of the folder were distributed by the Department's exhibits at the C.N.E. in Toronto and the Central Canada Exhibition at Ottawa. Other shipments to D.H.O. exhibits at fall fairs and similar events brought the total to 120,000.

The Information Section assisted in staffing and supervising the D.H.O. exhibit at the Canadian National Exhibition, Toronto.

The Road Bulletin was issued on a semi-monthly basis from May 5 to November 30.

At the top of the list of material created and distributed by the Information Section was the annual Official Road Map, closely followed by the "Picnicking/Camping via Ontario Highways" folder. In the case of the road map, total production for the fiscal year was 1,600,000. It was distributed directly and through the Department of Travel and Publicity.

Finally, the Annual Report was compiled, edited and produced under the supervision of the Information Section.

Electronic Section

A. E. Goodwin, P.Eng., Manager, Electronic Computing Centre

The Electronic Computing Centre is responsible for all data processing work done for the Department of Highways, and for the design, development and application of systems requiring the use of a high-speed computer and/or auxiliary equipment.

Programming Group: Engineering

A staff of engineers and mathematicians, trained on problem analysis, systems design and program development is available to work with any Branch or Section that has a problem requiring a solution involving electronic computers.

The request for assistance is usually directed to the Centre through the liaison person assigned for this purpose. Discussions concerning the area under consideration are held and the problem defined. If the Electronic Computing Centre can be of help plans are laid to study the problem in depth and from the study a program is developed.

Programming Group: Accounting and General

A Programming Group, similar in nature to that available for engineering problems is ready to assist on systems and methods design in non-engineering areas. The prime area of activity in the past has been that of accounting, with the Financial Comptroller's Branch paramount as a user. This group is responsible for the study of problems and the development of systems that require the use of a computer and that are of a non-engineering nature. The liaison person assigned to the branch or section should be notified of problems requiring study by the Electronic Section. He will contact the manager who will arrange for the necessary aid.

Production Staff

The production of routine reports and repeat requests is handled through the Production Group. This Group is, in effect, four separate groups:

(a) Key Punch and Verifying Operators
(b) Computer and Auxiliary Equipment Operators
(c) Control Checking — Engineering
(d) Control Checking — Non-Engineering.

All work to be processed through the "IBM" system as it is commonly called must be placed on IBM cards. These cards are of standard size and able to hold up to 80 columns of data, either alphabetical or numerical.

The arrangement of the data on the cards is decided early in the system design process and once fixed remains in what is called the format for a given job. Each job will have its own characteristic card design, and in some cases more than one card type is necessary.

The information goes on the card by means of a key punch machine. This machine will punch a hole in whatever card column the operator wishes. After

key punching the cards are verified, a similar operation to punching, but in this case the cards are "read" by the verifying machine and errors detected.

Once the cards are free from error they can be placed on the computer and the results printed in some predetermined way for ease of use.

After each step a manual check is introduced to be sure that the preceding steps have been done correctly. The two control groups, consisting of experienced staff, review the work and screen it for error, completeness and content.

Liaison

In order to provide effective assistance on systems design and to develop problem solutions in a minimum of time each Branch has a liaison man assigned to work between his Branch and the Electronic Section.

His duties are, in general, to bring problems to the attention of the Electronic Section and to represent the Branch in the progressive discussions which occur during the period of problem definition and development.

When a Branch has more than one major area of interest, such as is the case with Planning and Design, a liaison man is assigned for each major area. The Road Design Division, Bridge Division and Traffic Section each have a representative on the liaison team.

In order to ensure completeness and accuracy when we approach a problem, great stress is placed on problem definition. It is necessary to include many points in the discussions which culminate in the plan of approach and persons other than liaison and computer staff, knowledgeable on the particular subject under review, are invited to attend these meetings when it is felt their presence would be valuable.

The liaison man himself acts in a dual capacity for, in addition to his participation in the review of a problem, he also acts as the teacher of data processing techniques and in many cases a major part of his job consists of lecturing those persons responsible for using the Electronic Section or for preparing the data in a fashion suitable for easy processing.

There is a great need to exercise care when setting up data as it must be clear and concise. The liaison man, if he is a member of an engineering branch, will be called on to travel a good deal and during these trips he discusses progress and difficulties with the field staffs. He passes on his knowledge to these men and also hears from them difficulties which have to be considered on his return to the Centre.

Equipment

Existing:

The equipment presently in use at the Electronic Centre is as follows:

(a) An IBM 650 computer using a 543 input unit with a speed of 250 IBM cards per minute and a 544 output unit with a speed of 250 cards per minute. The memory of the computer is capable of holding 40,000

characters of information at a given time. The memory capacity is augmented by 4 tape units, which use magnetic tape as a data transport medium. Each tape unit can be contacted at any time for processing or storage purposes. The tapes can pass data into the memory at a rate in excess of 900,000 characters per minute, which makes the use of tapes a rewarding proposition as this speed is many times faster than conventional cards.

Three special registers, known as the A, B, C registers, are also available. These registers can be used in many ways to speed up the flow of work into the memory. The floating point arithmetic feature is also included, as is a property unique, originally with the 650 computer, that of table look-up through a single command.

The computer system outlined is the most powerful that can be obtained by using a basic 650 computer. A further gain in efficiency can only be realized by the replacement of the computer with a more advanced design.

(b) In order to print reports in a readable form it is necessary to have a machine that can read the output cards from the computer and print letters and numbers from these cards. Such a machine is the IBM 407 tabulating machine. This is an electro-mechanical devise controlled by a wired panel and by coded information on the IBM cards. The "Tab" works at a maximum speed of 150 cards per minute.

Accounting work can be handled in part by the 407 because it can add and subtract numbers and so perform quite adequately as a bookkeeping machine.

There are five 407 "Tabs" in the Department. Two of these "Tabs" have been modified to plot points on graph paper. A typical use of this plotting technique is that of cross-section field notes and theoretical road design templates. The two plots can be produced at the same time and at a rate of up to 600 sections per hour. A grid of points a twentieth of an inch apart can be called upon so the fineness of selection is excellent. A good point to keep in mind about plotting in this way is that the survey notes are reduced, screened for errors and corrected, grouped in proper sequence or "consolidated" as we call it, and each point has printed beside it the elevation and 'X' co-ordinate. The assurance of completeness and accuracy is a valuable asset of this method as there is little or no chance of error.

Of course, the uses that can be made of this plotting system are too numerous to mention, but some of them are:

(i) Road Design Cross-Section

(ii) Final Pay Originals

(iii) Equations of many kinds

(iv) Statistical plotting, with any grouping.

(c) There are sixteen key punch machines, each one used to place basic data such as payroll data, accounts payable, land survey data, bridge design parameters, field note book data, equipment records, statistical records, personnel records, etc., onto the IBM card.

In addition to the sixteen key punches in the group we are responsible for four others that are attached to the Kelsh Plotters owned by Planning and Design. Directly from aerial photographs we get IBM cards which contain the elevations of all points required. These elevations go directly to the computer for quantity calculations.

(d) Eight verifiers, similar to the key punch machines are used to ensure accuracy on the IBM cards. They perform a repeat of the key punch operation, but instead of punching a card they "read" it and a comparison is made. A difference indicates an error, which is then corrected.

(e) Six sorting machines are ready to aid in arranging cards in whatever order is best for a subsequent operation. These machines are fast. They will handle up to 2,000 cards per minute.

(f) A traffic count decoding machine made by Fischer Porter punches the traffic counts taken at key points in our highways network onto IBM cards directly from paper tapes. This information is processed in many ways. One way is the establishment of predicted A.A.D.T. values from a minimum number of counts.

(g) We have collators — four in all, which can merge different card decks together.

(h) The gang punches — three in number, are used to produce copies of card decks, in volume.

On Order:

The Electronic Computing Centre has gradually developed programs and methods for handling a variety of work. As the work load has increased we have increased the computer capacity by adding additional features. A point has been reached, however, where no computing power can be added to the existing computer. In order to increase our capabilities we have ordered new equipment for delivery in 1963 as follows:

(a) A 1401 computer with magnetic tapes and a high speed memory is due to appear on the scene in April, 1963. This is a core machine with a variable word length feature which makes it extremely flexible for report editing and printing. The printing is done on line with the computing unit. This means that the writing of output information is done at the same time as data calculating. A rate of 600 lines per minute is possible for alpha numeric work and 1,200 lines per minute on pure numeric work. This computer will replace some of our "Tabs" and do calculations that the Tabs could never duplicate.

(b) A large computer to replace the 650 computer is under study. No decision as to the model has yet been made. But it will have to have a larger memory and higher throughput rate than the 650.

When all planning has been done it will be possible to replace much of the present equipment with fewer pieces and so operate at greater speed and efficiency than before.

Areas of Activity

The use of data processing techniques in both government and industry is widespread. The variety of applications points up the power of this approach to problem solution. The fields of accounting, management, engineering and science have all been greatly assisted by the scope of the computer. The Department has applied the computer in many ways, but there still remains many things that can be done with them.

The computer offers its greatest gifts in solving problems which people do not have the time to do. In order to administer a large department such as ours, it is necessary to digest, analyse and understand large masses of minor facts. A computer can produce control information for top management to use in time to be effective. Such areas are yet to be handled effectively but the new equipment will enable them to be placed on a routine basis.

Current Activity

Accounting:

Much of the accounting work is handled, in part at least, by the Centre's equipment. In some cases the data processing reports are the only ones available and no conventional ledgers are kept.

In other cases we perform a cross check of ledger accounts and a summarizing of data such as occurs when the annual report is prepared.

The writing of cheques can be done mechanically even to the signature of the Financial Comptroller. However, our cheque writing is limited to Head Office Unclassified Payroll, bank cheques for reimbursement of impressed fund accounts and expense account payments. The card deck for writing Regular and Probationary Payroll cheques are prepared and balanced at the Centre, but the cards are sent to Treasury Department for cheque writing and signature, this responsibility having been left to the Treasury Department.

From the detailed records of accounting, currently kept on IBM cards, are prepared a large variety of analyses and special reports, indicating once again the advantage of having basic information in the dynamic form offered by a punched card.

Personnel:

The Personnel Branch keeps a record of certain basic information on IBM cards. This set of cards is retained at the personnel office for security reasons.

Whenever a tabulation of such items as PR23 forms, T4 slips, staff lists etc.,

are required, a request is sent to the Centre and the lists are produced there. All board wiring etc., is done by the staff of the Centre.

It is hoped that with the advent of the new equipment in 1963, the true potential of the data on the Personnel Branch's IBM card deck can be realized.

Planning and Design:

The Planning and Design Branch was the first user of data processing equipment and has always been a prime user of Computer facilities. The future indicates an ever growing use of the computer in all the following Sections or Divisions:

Bridge Division:

One of the most active users of the computer, the Bridge Division, called on our services 2,407 times in the current fiscal year. A steady growth of effective programs has been brought about by excellent liaison and exceptional co-operation between the Bridge Division and the Centre. Plans are underway to move into more comprehensive programs for complete bridge design, based on the modular concept of subroutine program assembly. The new equipment will revolutionize the activity in this area.

There are active bridge programs extant which permit the bridge engineers to free themselves from detail analysis so they can concentrate on the theory of advanced design. An area of prime interest is, of course, that of prestressed concrete, and it is felt that great strides will be made in advancing this difficult but rewarding area.

Traffic and Planning Study Section:

The Traffic Section has used the Centre for analysis of traffic counts for Annual Average Daily Traffic predictions, since 1959 when a computer program was developed which allows A.A.D.T. estimations from a few counts. This has permitted the section to cover a wider area of the Province without increasing equipment and personnel.

A set of programs was produced which is known as a "Gravity Model". This set provides a means of determining the minimum path between any origin and destination. The Hamilton Area Transportation Study has used this set of programs to excellent advantage. In addition London, Windsor, Sault Ste. Marie, Peterborough and other studies have benefited from this advanced concept.

Road Design:

The Centre continued to provide a rapid service to the Road Design office for quantity calculations and work load distribution for project engineers.

Progress in program development continues to accommodate sophisticated ground line conditions in the Northern Region.

Operations Branch:

A steady increase in the use of the computers continued. There are now 18 districts using the service for original plotting and for final pay calculations. Development of the program continues with rock jobs a top priority item for consideration in the next fiscal year. Excellent co-operation from all persons concerned has led to good success in this vital area.

Services Branch:

During the last year over 100,000 courses were calculated on original surveys and 40,000 courses on revised surveys.

Financial Comptroller's Branch:

This branch is a heavy user of the auxiliary equipment and extended its operation into the computer area when preliminary work was done on statistical reporting and cost accounting methods.

LEGAL BRANCH

Director, **A. R. DICK**

Solicitors

The Director and two other solicitors are located in the main office of the Department at Toronto to prepare agreements and other legal documents and to provide legal services and advice to the various branches of the Department and to assist and advise the regional solicitors when necessary. There are regional solicitors in the regional offices of the Department at Kingston, London, North Bay and Toronto to prepare or approve deeds and other documents and to advise the personnel of the regional and district office in legal matters.

Signs and Building Permits Section

This Section administers the policy and regulations regarding the erection of buildings, gasoline pumps, signs and other structures along the provincial highways and also with respect to entrances to controlled-access highways. It maintains general supervision over permits issued by the districts and gives assistance upon request to the Operations Branch personnel.

Building Permits:	
Number of Permits issued	4,887
Approximate valuation of buildings	$99,890,957.00
Gasoline Pumps:	
Number of Permits issued	3,596
Permit fees	$ 38,311.00
Sign Licences:	
Number of Licenses issued	4,622
Value received	$ 26,560.00

NOTE. — Licenses are issued according to the calendar year January 1st to December 31st.

Entrance Permits:	
Number of Permits issued	63
SB-PR-61 Permits:	
Number of Permits issued	1,385

BUILDING PERMITS ISSUED

Controlled Access Highway:	
Number of Permits issued	477
Value of Building Permits for Fiscal Year	$45,147,418.00
King's Highway Permits:	
Number of Permits issued by all Districts	4,410
Value of King's Highway Building Permits	$54,743,539.00

NUMBER AND VALUE OF KING'S HIGHWAY PERMITS ISSUED

District	Number Issued	Value of Permits Issued
Chatham	433	$3,886,589
London	275	3,197,795
Stratford	316	3,414,827
Owen Sound	251	1,429,444
Toronto	224	12,233,990
Hamilton	467	9,483,660
Port Hope	276	2,907,570
Ottawa	136	2,025,595
Kingston	239	1,901,650
Bancroft	146	783,800
Sudbury	218	2,656,545
New Liskeard	80	802,250
North Bay	445	2,507,625
Huntsville	263	2,647,901
Sault Ste. Marie	168	1,035,050
Kenora	175	2,013,598
Cochrane	168	899,975
Fort William	130	915,675

GASOLINE PUMP PERMITS ISSUED
Fiscal Year April 1, 1961 to March 31, 1962

Gross Revenue	$38,331
Number of Gasoline Pump Permits issued for Fiscal Year	3,596
Value of Gasoline Pump Permits issued for Fiscal Year	$37,635

Note. — Permits are issued for the calendar year.

FIELD ADVERTISING SIGN PERMITS ISSUED

Gross Revenue	$26,560
Number of Field Advertising Sign Permits issued for Fiscal Year	4,622
Value of Field Advertising Sign Permits issued for Fiscal Year	$26,302

Note. — Permits are issued for the calendar year.

Insurance and Claims Section

This Section is responsible for the insurance policies carried by the Department and for some motor vehicle liability policies carried by other Departments of the Government. The Section investigates and supervises the settlement of claims made against the Department under The Highway Improvement Act and claims made by the Department under The Workmen's Compensation Act. There are other miscellaneous types of tortious claims which are also dealt with by this Section.

VOLUME OF CLAIMS AND INVESTIGATION

Claims against Department — non-repair of highway	545
Claims against Department — miscellaneous liability	323
Claims by Department — for damage to Department property	3,009
Claims by Department — for personal injuries to employees	88
Investigations of accidents — involving government vehicles	902

This represents an increase of 513 claims handled by this section as compared with the previous year but does not include miscellaneous types of minor complaints which were also investigated and resolved.

REPORT OF THE FINANCIAL COMPTROLLER

COMPTROLLER, J. G. McMILLEN, C.A.

The following statements outline the expenditures and cash receipts of the Department of Highways, Ontario, for the year ended March 31st, 1962.

I. Ordinary Expenditure
II. Capital Payments, including Expenditure Summary
III. Trans-Canada Highway
IV. The "Queensway" — Ottawa
V. Receipts
VI. Comparison of Average Unit Prices paid on Contracts
VII. Burlington Bay Skyway

Total Expenditure

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at $243,238,200. The following is a comparison of total expenditures with previous years:

1957	$200,850,551	1960	$248,514,195
1958	212,764,943	1961	237,994,017
1959	227,547,235	1962	243,238,200

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement III in the amount of $192,838,108
with funds recovered or recoverable of 103,341,555

and a net cost to the Department of $ 89,496,553

Recoverable Expenditures

Within the fiscal year, the Department recovered $23,450,578 made up as follows:

Trans-Canada Highway	$11,623,549
Ottawa Queensway	1,380,118
Railway Bridges	1,797,142
Niagara Falls Bridge Commission	500,000
City of Ottawa	900,000
Total of items separately set out in Statement II	16,200,809
Dominion-Provincial Resources Roads	1,653,424
Department of Mines	1,767,781
Sundry Items credited to Expenditure and Revenue	3,828,564
	$23,450,578

It is interesting to note the relationship of such recoverable expenditures to the Department's total expenditures on the construction and maintenance of King's Highways. The relationship is the recovery of $1.00 for every *$10.00* expended for such purposes.

The Department's qualification procedures covered 116 of the Capital Contracts awarded during the year. An average of 8.9 bids were received on qualified contracts, as compared with 7.8 bids on unqualified contracts.

Indices of Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following chart is submitted showing:

Index of Tender Prices paid on Road Contracts, and

Indices of Tender and Material Prices

It is evident from these indices that unit prices on contracts awarded as well as prices paid for road materials, have dropped during the year.

Burlington Bay Skyway

The accompanying schedules indicate an upward trend in the number of vehicles using the Skyway.

Automatic toll collection equipment went into operation on April 4, 1961 on a trial basis.

STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Years Ending March 31, 1962 and March 31, 1961

	Year Ending March 31, 1962		Year Ending March 31, 1961	
Maintenance of King's Highways and Secondary Highways —				
Winter Maintenance —				
Contract and day labour	$14,878,279		$12,751,929	
Equipment operating costs due to standby (60 per cent)	177,422		404,230	
Summer Maintenance —				
Patrol costs	10,074,230		9,562,118	
Gravel crushing, contract and day labour	816,481		1,171,833	
Prime, contract and day labour	569,514		518,223	
Hot mix patching, contract	706,399		564,500	
Surface treatment, contract and day labour	700,024		422,607	
Mulch, day labour	41,091		29,034	
Major bridge repairs	362,936		207,056	
Salt shed construction	16,404		204,573	
Equipment operating costs due to standby (40 per cent)	118,281		269,486	
Operation of ferries	310,451		282,992	
Floods and other emergencies	19,031		168,927	
District office overheads, including engineering, warehouse and municipal	6,744,431		6,197,922	
Net cost of equipment rented to municipalities	65,073		64,916	
Expenditures recovered, but credited to revenue	178,422		147,438	
Increase in inventories	108,771		77,681	
		$35,887,240		$33,045,465
Repaving of present roads		379,484		1,081,218
Maintenance of development roads		162,845		139,957
Maintenance of roads in unincorporated townships in Northern Ontario		711,500		733,405
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)		37,141,069		$35,000,045

STATEMENT I (Cont'd)

General Operating Expenditures —				
Purchase of new trucks, tractors, graders, sanders, plows and other road equipment	$ 2,642,562		$ 3,063,346	
Printing and stationery	857,267		822,809	
Office furniture and equipment	382,841		336,904	
Workmen's compensation	250,602		218,465	
Insurance and claims	250,110		193,151	
Unemployment insurance stamps	260,472		270,975	
Maintenance of buildings and area office rentals	403,921		322,460	
Bus rentals	67,518		117,473	
Teletype rentals	84,937		76,417	
Staff training	80,131		85,230	
Recoverable expenditures (net)	(21,080)		39,884	
Central stores, increase in stock	5,768		67,544	
		$ 5,265,049		$ 5,614,658
Head Office —				
General administrative and operating staff salaries	$ 3,980,508		$ 3,693,486	
Travelling expenses	315,993		304,888	
Electronic Section, salaries and equipment rentals	171,502		176,673	
Sundry	675,102		460,349	
		$ 5,143,105		$ 4,635,396
Roads publicity, etc.		117,435		125,116
Burlington Bay Skyway, toll collection costs		205,999		177,306
Municipal Subsidies —				
County Roads	$ 5,234,623		$ 5,236,221	
Township roads	11,730,612		12,072,474	
Cities, towns and villages	8,827,510	$25,792,745	8,702,582	$26,011,277
TOTAL ORDINARY EXPENDITURES		$73,665,402		$71,563,798

PER PUBLIC ACCOUNTS

Total Ordinary Expenditures per Public Accounts	$73,665,402		$71,563,798	

STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Years Ending March 31, 1962 and March 31, 1961

	YEAR ENDING MARCH 31, 1962		YEAR ENDING MARCH 31, 1961	
Construction of King's Highways and Secondary Highways —				
Payments to contractors	$62,471,625		$70,125,566	
Materials and sundry contract expenditures	35,903,213		31,163,167	
Engineering	10,029,475		10,680,363	
		$108,404,313		$111,969,096
Construction of development roads		7,624,018		7,995,256
Construction of roads in unincorporated townships in Northern Ontario		566,889		491,494
		$116,595,220		$120,455,846

STATEMENT II (Cont'd)

Expenditures allocated to the above roads —				
Property purchases	$ 8,847,209		$ 7,896,840	
Land surveys	1,801,163		2,056,628	
Planning and design	3,596,917		3,502,655	
		$ 14,245,289		$ 13,456,123
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)		$130,840,509		$133,911,969
Expenditures of Head Office branches unallocated and not included above:				
Property	$ 1,464,210		$ 1,388,184	
Land Surveys	1,025,480		908,740	
Planning and Design	3,268,955		2,517,121	
Construction of new buildings	704,590		548,640	
Soils testing and research	2,200,645		2,277,545	
Engineering Audit	662,906		620,827	
Increase (decrease) in Bailey bridge and steel inventories	219,698		(213,584)	
Recoverable expenditures, net	(762,188)		(446,022)	
Electronic Section, salaries and equipment rentals	367,816		222,500	
Sundry	31,579		74,844	
		$ 9,183,691		$ 7,898,795
Municipal Subsidies:				
County roads	$ 11,944,793		$ 12,377,174	
Township roads	13,188,476		13,077,629	
Cities, towns and villages	20,616,138		18,978,238	
		$ 45,749,407		$ 44,433,041
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION		$185,773,607		$186,243,805
Less Recoveries:				
Trans-Canada Highway	$ 11,623,549		$ 16,500,840	
Ottawa Queensway	1,380,118		1,367,729	
Railway bridges	1,797,142		1,945,017	
Niagara Falls Bridge Commission	500,000		.....	
City of Ottawa	900,000		.....	
		16,200,809		19,813,586
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS		$169,572,798		$166,430,219

EXPENDITURE SUMMARY

Ordinary expenditure	$ 73,665,402		$ 71,563,798	
Capital payments, net	169,572,798		166,430,219	
		$243,238,200		$237,994,017
TOTALS		$243,238,200		$237,994,017

STATEMENT III

TRANS-CANADA HIGHWAY

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Dominion Government on April 24, 1950.

	Refundable by Dominion Government	Expended by Department
Refunded by Dominion Government on account of work performed prior to April 14, 1950	$ 1,569,640	.....
Year ending March 31, 1951	2,749,329	7,043,559
" " " 1952	3,453,866	8,242,801
" " " 1953	4,103,753	11,746,130
" " " 1954	2,486,860	9,686,452
" " " 1955	6,274,487	5,675,343
" " " 1956	3,365,959	9,602,299
" " " 1957	4,855,053	13,996,280
" " " 1958	12,381,361	20,683,306
" " " 1959	15,803,757	27,995,777
" " " 1960	17,662,423	28,412,552
" " " 1961	16,500,840	24,786,757
" " " 1962	11,623,549	16,168,477
Expenditures by Department for property and other non-recoverable expenditures	.....	8,798,375
Totals to March 31, 1962	$102,830,877	$192,838,108
Further claims to be submitted based on expenditures to March 31, 1962 — Claim No. 107	$ 407,008	
" No. 108	103,670	
Total Refunds by Dominion Government		$103,341,555
Net Estimated Cost to March 31, 1962		$ 89,496,553

STATEMENT IV

THE QUEENSWAY - OTTAWA

The following statement sets out expenditure and amounts recoverable on the "Queensway," Ottawa since the signing of the Agreement with the Dominion Government, the Federal District Commission and the City of Ottawa on March 19, 1957.

Expended by Department:		
Year ending March 31, 1958	$ 563,956	
" " " 1959	1,720,076	
" " " 1960	3,860,475	
" " " 1961	5,723,245	
" " " 1962	3,889,962	
		$15,757,714
Recovered from Dominion Government:		
Year ending March 31, 1958	$ 204,500	
" " " 1959	109,221	
" " " 1960	773,681	
" " " 1961	1,367,729	
" " " 1962	1,380,118	
	$ 3,835,249	

STATEMENT IV (Cont'd)

Further amounts to be recovered based on expenditure to March 31, 1962		$ 211,156	
Amounts to be recovered from The Dominion Government		$ 4,046,405	
Recovered from the City of Ottawa		900,000	
AMOUNTS TO BE RECOVERED FROM:			
The City of Ottawa	$ 2,045,297		
The Dominion Government and the City of Ottawa — in process	887,155	2,932,452	
TOTAL RECOVERIES			$ 7,878,857
NET ESTIMATED COST TO MARCH 31, 1962			$ 7,878,857

STATEMENT V

STATEMENT OF RECEIPTS

For the Fiscal Years Ending March 31, 1962 and March 31, 1961

	YEARS ENDING MARCH 31, 1962	YEARS ENDING MARCH 31, 1961
Sales of land and buildings	$ 575,118	$ 997,738
Property rentals	270,770	296,783
Sale of services and materials	426,907	356,885
Permits — sign and housemoving	48,268	45,325
Gas pump revenue	37,430	37,115
Gas line franchises	13,830	9,730
Burlington Bay Skyway	707,908	668,255
Miscellaneous	75,227	73,010
TOTAL RECEIPTS	$2,155,458	$2,484,841
Distribution:		
Ordinary revenue	$1,541,703	$1,457,040
Capital receipts	613,755	1,027,801
	$2,155,458	$2,484,841

STATEMENT VI

COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS

(Items used for price index purposes)

For period April 1, 1950 to March 31, 1962

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Excavation Cu. Yd.	Rock Excavation Cu. Yd.	Granular "A" Ton	Granular "B" Ton	5/8" Crushed Gravel "A" Ton	5/8" Crushed Gravel "B" Ton	Bituminous Hot Mix Top Course Ton	Bituminous Hot Mix Base Course Ton	Sand Cushion Ton	Earth Compaction Cu. Yd.	Compaction Equipment Hour	Water for Compaction M. Gal.	Concrete in Culverts Cu. Yd.	Concrete in Structures Cu. Yd.	Structural Steel Fabrication Ton	Structural Steel Erection Ton
	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	.....	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	.....	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.66	4.88	.79	.029	.....	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	.....	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	.....	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	.....	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	.....	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	.....	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.68	3.52	.71	.042	.....	4.56	26.79	31.98	237.93	59.50
1959/60	157.32	156.31	.41	2.00	1.44	.82	1.17	1.38	5.13	3.91	.79	.....	6.29	4.37	27.90	37.77	246.28	63.69
1960/61	157.89	161.49	.43	1.81	1.26	.71	1.55	1.37	4.68	4.11	.70	.....	6.49	3.81	26.33	32.66	277.75	75.32
1961/62	156.25	146.74	.36	1.76	1.29	.69	1.08	1.23	4.12	2.99	.69	.....	8.05	3.27	22.60	29.50	233.71	39.78

STATEMENT VII

BURLINGTON BAY SKYWAY

COMPARATIVE STATEMENT OF TOLL COLLECTION REVENUES AND EXPENDITURES

For the Years Ending March 31, 1962 and March 31, 1961

	Year Ending March 31, 1962	Year Ending March 31, 1961	Increase	Percentage Increase
REVENUES:				
Toll Revenue Earned:				
Class I vehicles	$ 620,871	$ 594,466	$ 26,405	4.4%
Class II vehicles	36,879	33,583	3,296	9.8%
Class III vehicles	37,094	34,455	2,639	7.7%
Total Revenue Earned	$ 694,844	$ 662,504	$ 32,340	4.9%
Plus — Tickets sold but not presented	12,197	8,597	3,600	41.9%
	$ 707,041	$ 671,101	$ 35,940	
Add Premium) U.S.	867	.....	867	
Less Discount ∫ Funds	.....	2,846	2,846	
Total Revenue	$ 707,908	$ 668,255	$ 39,653	5.9%
EXPENDITURES:				
Toll operating staff salaries	$ 138,560	$ 143,977		
Travelling expenses	1,200	422		
Office expenses and stationery	19,399	5,485		
Uniforms and raincoats	917	2,171		
Light, heat, water, telephone, etc.	6,447	10,344		
Maintenance of building	2,172	1,253		
Maintenance of equipment	6,288	3,577		
Rental of equipment	31,016	10,077		
	$ 205,999	$ 177,306	$ 28,693	16.2%
Excess of Revenues over Expenditures	$ 501,909	$ 490,949	$ 10,960	2.2%
TRAFFIC:				
Class I vehicles	6,599,745	6,119,236	480,509	7.9%
Class II vehicles	163,137	148,167	14,970	10.1%
Class III vehicles	104,302	97,773	6,529	6.7%
Total	6,867,184	6,365,176	502,008	7.9%

	Cash	Tickets
TOLL RATES:		
Class I vehicles (passenger cars and trucks under one ton capacity)	15c.	5c.
Class II vehicles (passenger cars with trailers and trucks with two axles and more than one ton capacity)	25c.	16⅔c.
Class III vehicles (trucks with three axles or more and public vehicles)	45c.	30c.

SUMMARY REPORT OF THE CHIEF ENGINEER

by W. A. CLARKE, P.Eng., *Chief Engineer*

Ontario's highway construction program retained its accelerated pace of the past two years, thus keeping apace with the Province's rapidly expanded economy. This was achieved by furtherance of new engineering techniques, equipment, and finally, local reorganizations aiming at a closer understanding between the various government levels of the many and complicated highway problems.

One of the organizational changes made during the past year was the transfer of the Urban Studies staff to the Traffic Section and the incorporation of a research group within this section, with resultant activity of this particular section being highlighted by the presentation of four different types of road log publications. The newly formed Research Studies unit conducted two projects this year, one dealing with the various aspects of the Controlled Access Highway policy for the Province and another concerning a research study of the many aspects of strip development along Provincial highways in Ontario. A highway subsidy study was begun in 1961, carrying out research into the assignment of municipal subsidies in Ontario, with a report being prepared in early 1962 for presentation to the Minister. Commensurate with the new techniques, the Department had five different types of vehicle detectors in operation at permanent locations, consisting of the most modern type of equipment available.

Location survey work progressed in keeping with the expanded road construction, by completing a total of some 850 miles of location surveys for existing and proposed highways. Field surveys were made to supply control information for the large scale plans to be prepared with the aid of the new photogrammetric stereoplotting equipment.

The road design projects kept abreast of the current expansion policy of road construction work, by pre-engineering, computing and checking 164 projects comprising 696 miles of grading and paving, 200 miles of paving alone and 76 structures, with the larger emphasis of the work being placed on Highway 401, the Trans-Provincial Highway. Considerable impetus was given to the pre-engineering and design of highways in Northern Ontario to link previously unconnected communities, particularly Fort Frances to Atikokan, and Chapleau to Wawa. Carrying out such a vast amount of road design was simplified by a further development of the use of electronic computations. To speed up productivity of the plans for contract tendering work, contract information was provided this year on plans to a reduced scale, resulting in a time-saving printing operation by use of typewriter versus the manual printing. Along with the new type of plans, the new printing by off-set press method resulted in an improvement in the quality and appearance of the contract documents at a considerable saving to the Department. The Road Design Division presented a much-needed brief on drainage policies, with the principles and policies recommended in such brief giving the Department positive direction in negotiations with other jurisdictions on drainage development schemes.

The bridge work this year continued the policy of designing, where practical, welded plate girders which could be fabricated from Canadian plate in Canada, in preference to rolled shapes which would have to be imported. The Bridge Office prepared a report on the design and construction of bridges over existing high-

ways in order to deal with the challenging current problem of designs of grade separations over existing highways. This report would also take into account traffic conditions, detours, stage construction and the economics of various bridge types. New specifications and procedures, particularly with regard to the preparation for, and application of, shop painting, were created this year for the basic purpose of reducing future maintenance costs of structural steel structures.

As in previous years, progress was maintained on the large-scale capital projects by heavy concentration of work on the Trans-Provincial Highway 401, the Trans-Canada Highway, the Ottawa-Queensway, the International Bridge at Sault Ste. Marie, the Homer Bridge over the Welland Canal and the Fort Frances Causeway. Details of the progress and completions of the sections of the foregoing are covered in considerable detail by the independent reports that follow.

To perpetuate this rate of progress on these very important projects, contracts of many types were called this year, thus indicating no let-down on these major projects.

Maintenance operations were, of necessity, accelerated in accordance with the large-sized construction programs of the previous years, in order to provide the services expected by the travelling public. This, of course, would effect increased projects in respect to pavement patching, shoulder repairs, tree planting, zone painting, highway signing, etc., and particularly, bridge inspection. In respect to bridge inspection, a very thorough program was carried out this year in order to evaluate future bridge maintenance programs. As a result of this extensive bridge inspection campaign, in a few cases old deficient structures were replaced by Bailey bridges. Owing to the increasing prevalence of elm rot disease, a forestry crew of the Department was considerably active in removing dead and dangerous trees in order to protect the travelling public. In connection with the forestry, the Department's "Tree Saver" was again very active in saving and relocating mature trees that could be affected by reconstruction work.

A Winter Works program in 1960, while relatively large, was more extensive in 1961, with the various districts being successful in carrying out many projects concerning clearing, grubbing, rock and earth excavation grading, etc. A continuance of the joint Provincial and Dominion governments' program for the development of picnic sites under the Winter Unemployment program, resulted in some 100 sites being approved or developed.

The detailed synopsis following, by the respective Branches and Sections, illustrates in much more detail the operations of the Department.

Engineering Audit Section

Field auditing and contract checking comprise the two major sub-sections of the Engineering Audit Section.

Under the direction of the Field Audit Supervisor, the auditing of engineering records is carried out on a Regional basis. During the design stages of a proposed construction project, a spot survey is performed to ensure that the pre-engineering field data are complete and accurate. Further periodic audits are conducted on the original and progress engineering records as the construction work is performed. Special attention is given to the contractor's interim payments, to ensure

that the amounts paid agree with the actual work completed. Deviations from standard practices are brought to the attention of the District Engineers who see that the necessary corrective action is taken. Unusual problems requiring special consideration are referred to the Manager of Operations for clarification. In this way, departmental decisions are consistent and uniform treatment is given in all cases.

The Contract Checking Sub-section, located at Head Office, is responsible for the review of the final calculations as prepared by the various district offices, of all departmental contracts and projects. The final payment to a contractor or supplier is based on the quantities as audited by this group.

For the fiscal year 1961–1962, the following table lists, by districts, the number of contracts processed by the Contract Checking Office, with their total monetary value.

	Construction		Maintenance		Invitation Bid	
	No.	Value	No.	Value	No.	Value
Chatham	14	$ 2,930,877	8	$ 128,339	5	$ 29,522
London	22	4,331,306	7	115,741	4	36,554
Stratford	7	1,429,730	9	112,190	9	26,752
Hamilton	18	7,104,571	12	520,407	4	35,868
Owen Sound	16	3,225,899	9	183,964	3	15,684
Toronto	19	5,384,715	19	1,094,639	11	50,037
Port Hope	18	7,005,855	12	290,820	....	.....
Kingston	15	4,361,321	12	261,343	2	14,985
Ottawa	20	5,623,001	3	93,293	8	41,164
Bancroft	9	1,409,131	3	133,563	....	.....
Huntsville	11	2,803,257	9	183,108	....	.....
North Bay	9	3,235,989	9	162,819	....	.....
New Liskeard	16	2,161,450	8	71,535	1	10,440
Cochrane	10	6,154,117	3	57,156	....	.....
Sudbury	9	4,854,487	10	171,868	3	58,103
S. S. Marie	11	3,319,129	4	48,167	....	.....
Fort William	26	12,598,877	....	.....	1	34,207
Kenora	12	6,363,282	5	146,108	....	.....
White River	4	3,105,038	....	.....	....	.....
	266	$87,402,032	142	$3,775,060	51	$353,316

The preparation of "As Constructed Plans and Profiles" has progressed steadily, resulting in a permanent record of our construction contracts, which should prove of great value in the future.

OPERATIONS BRANCH

J. B. WILKES, P.Eng., *Manager of Operations*

CONSTRUCTION
H. A. Tregaskes, P.Eng.
Construction Engineer

Regional and District Engineers

MAINTENANCE
C. Tackaberry, P.Eng.
Maintenance Engineer

CONSTRUCTION

H. A. TREGASKES, P.Eng.—Construction Engineer

In the 1961–62 fiscal year a very heavy construction program was carried out, with particular emphasis placed on major projects commenced in previous years. These included the Trans-Provincial Highway 401, the Trans-Canada Highway, the Ottawa Queensway, the Skyway over the Welland Canal on the Q.E.W. and the new controlled access Highway 403, part of which passes through the city of Hamilton. In addition, construction was started on the important new dual highway 405 connection between the Q.E.W. and the new international bridge over the Niagara River at Queenston.

Besides the large amount of work performed on these major projects, construction and reconstruction of various main and secondary highways and structure work were carried out throughout the province. Special accent was given to the mining and access road work in northern Ontario.

Some of the more important work carried out in 1961–62 was as follows:

SOUTHWESTERN AREA—Chatham, London, Stratford and Owen Sound Districts

Work continued on Highway 401 in this portion of the province and in the fall of 1961 a 26-mile section from Preston to Eastwood was opened to traffic, and grading, structure and interchange work was in progress on a continuous 72-mile section between Highway 4 and the Tilbury By-pass, the latter being opened in the fall of 1961.

A new portion of Highway 39 by-passing the town of Tecumseh and covering 7½ miles was finished in 1961.

Work began on improvements to the southern entrance to the city of Windsor from Highway 3B, and by year's end a considerable amount of work had been performed.

Good progress was made in rebuilding Development Road 471 between Courtright on Highway 40 and Alvinston on Highway 79, a distance of 29 miles.

On Highway 76 from Highway 2 to Highway 7, covering 7.5 miles, reconstruction was completed, and the new large bridge over the Thames River was well under way.

A start was made on a new highway known as Highway 126 into the city of London from Highway 401, and the new bridge for this highway over Highway 401 was completed.

Reconstruction on Highway 4 north of London and in the vicinity of Centralia was carried out.

On Highway 21 the major work at Goderich was completed, and good progress was made on the section from Grand Bend to St. Joseph.

The reconstruction on Highway 23 from Listowel to Teviotdale, and in Listowel, covering 14.8 miles, was largely finished by the end of 1961.

Work on the dual highway diversion of Highway 8 at Freeport, with structures, was begun in the fall of 1961.

Rebuilding and resurfacing of important Highway 2 from Thamesville westerly for 10 miles was completed.

Highway 9 from Orangeville westerly for 9 miles was reconstructed and paved and on Highway 6 northerly from Durham for approximately 6 miles work started in late summer.

CENTRAL AREA—Hamilton, Toronto, Port Hope Districts

A new section of Highway 401 from Port Hope to Highway 30 north of Brighton covering 29 miles was opened in mid-summer, 1961, thus greatly relieving traffic congestion on old Highway 2 in that area. Highway 401 is now completed in the Port Hope District. Work on service roads adjacent to Highway 401 west of Oshawa, and west of Bowmanville was carried out. Major rebuilding of the old Hogg's Hollow Bridge on Highway 401 was started.

A great deal of work was concentrated between Homer and Queenston on the new skyway over the Welland Canal and dual highway to Queenston known as Highway 405. On the skyway the substructure was completed and superstructures steel well under way by the end of the year. Good progress was made on the grading and structures on dual Highway 405. The new bridge on the Queen Elizabeth Highway over Welland Avenue in St. Catharines was finished.

Work on new Highway 403 in the vicinity of Hamilton progressed well. The work in this area is particularly intricate with numerous bridges and interchange work. Contracts were awarded late in the year for grading and structures from the Freeman By-pass on the Queen Elizabeth Way to near Highway 6, where Highway 403 work was first begun. Work under way on this new highway now covers 7.9 miles.

On the Queen Elizabeth Way widening to six lanes from Highway 27 to Highway 10 was completed, and at the latter highway the reconstruction of a collectorhead cloverleaf was started. Contracts were awarded for repaving the east lane of the Queen Elizabeth Highway from Lundy's Lane to Fort Erie.

On Highway 10 the bulk of the widening to four lanes was finished between Cooksville and north of the main line of the C.N.R. at Port Credit.

Reconstruction in 1961 of Highway 7 between Brampton and Georgetown greatly improved that highway.

New work on Highway 400 consisted of major grading and structures at Steele's Avenue, the northern limit of Metropolitan Toronto, and two fly-over structures.

On Highway 12 reconstruction between Greenbank and Sunderland covering 6.3 miles was completed as was paving and a new structure on the Gamebridge By-pass north of Beaverton.

Base course paving was carried out on Highway 7A in Port Perry, across the Lake Scugog Causeway and easterly covering in all 9.9 miles.

On Highway 14, between Bloomfield and Crofton, a 7.5-mile section was regraded and finished ready for paving.

Reconstruction of 6 miles of Highway 58 between Port Colborne and Welland was completed, and on Highway 45 from Hastings to Norwood, grading was finished preparatory to paving.

The rebuilding of Highway 48 from Highway 401 north for 3 miles progressed well.

EASTERN AREA—Kingston, Ottawa, Bancroft Districts

A great deal of work was carried out on Highway 401 in this area in 1961. By year's end the south lane of two new sections was opened to traffic, Highway 38 to Odessa covering 7.5 miles and the 10 miles between Johnstown and Iroquois. The major interchange at Highways 401 and 16 and approach to the new international bridge over the St. Lawrence were also completed in 1961. A heavy concentration of work was located east and west of Cornwall covering approximately 32 miles and consisting of grading, culvert, structure, granular base and concrete paving. The interchange at Highways 401 and 38 was opened to travel.

Good progress was made on the Ottawa Queensway and stage 2 from Highway 15 to Carling Avenue was opened to traffic. Very complicated work progressed well easterly from Carling Avenue towards the centre of the city.

Highway 7 received base course paving on a rebuilt 10-mile section west of Highway 38, and from Kaladar easterly for 8.6 miles good progress was made on heavy rock construction.

On Highway 15 between Morton and Elgin, 6.0 miles, paving was largely completed, and between Seely's Bay and Morton the reconstruction was finished except top course paving.

The Manotick diversion on Highway 16 was completed.

Between Cobden and Meath on Highway 17, a distance of 5.5 miles, the reconstruction, started in 1960, was finished.

Highway 29 was rebuilt from Pakenham to Highway 17, a distance of 10 miles, and on Highway 33 from Kingston to Collin's Bay rather complicated widening work was completed.

A section of reconstructed Highway 41 from Denbigh southerly covering 8.0 miles was paved in 1961.

NORTHERN AREA—Huntsville, North Bay, New Liskeard, Sudbury, and Sault Ste. Marie Districts

On Highway 11 a start was made on the reconstruction of the last section between Toronto and North Bay, from Sundridge to south of Trout Creek, a distance of 13.2 miles.

The reconstruction work on Highway 11 from Earlton to Englehart progressed sufficiently well to allow base course paving in 1961.

The by-pass of Highway 11 around Cobalt, Haileybury and New Liskeard,

known as the Tri-town By-pass, was started, and work proceeded favourably in the grading and culvert operations.

The heavy rock grading work on Highway 69 from Hays Corners to Nobel, by-passing Parry Sound and covering 21 miles in all, was completed and that section paved by the end of the year.

The paving of Highway 69 from Pointe-au-Baril to Magnetawan River was finished, and reconstruction continued on Highway 69 north from the city of Sudbury for 8 miles.

Paving was carried out on Highway 68 through the town of Espanola and for 10 miles south, and further heavy rock grading commenced on the next 3 miles south.

Granular base and hot mix paving work was performed on Highway 17 from Echo Bay easterly for 10 miles, and on the first 19 miles of Highway 17 north of Sault Ste. Marie the final top course pavement was laid. At Bissett Creek, 25 miles east of Mattawa, the alignment of Highway 17 was greatly improved with the construction of new structures and grading.

The grading of the Secondary Highway 550 from Sault Ste. Marie to the Soo Airport was almost completed in 1961.

Resources road work progressed well in the northern area. By year's end it was possible to drive between Foleyet and Chapleau, and between Killarney and Burwash.

The second last grading contract in the rebuilding of Highway 66 west of the Quebec boundary was awarded during the year, and good progress was made on this section of Highway 66.

The construction of a large bridge over the Spanish River on Development Road 498 continued throughout the year.

Grading and granular base work for 7 miles on Highway 60 in Algonquin Park was carried out in the latter part of 1961.

NORTHWESTERN AREA—Cochrane, Fort William and Kenora Districts

With the finish of paving on Highway 11 east of Hearst the reconstruction of the 60 miles between Kapuskasing and Hearst was completed. Grading was finished on a 10-mile section of Highway 11, 10 miles south of Cochrane, and a further 9 miles of grading north of Porquis Junction to the south end of the completed contract was started. A major structure over the Missinaibi River at Mattice was opened to traffic.

A good deal of work was concentrated on Highway 11 at the Rainy Lake Causeway, east of Fort Frances. The high-level bridge was more than 50 per cent completed at the end of the year. A 10-mile rock grading contract east from the Causeway was awarded late in the fall of 1961 and during the winter good progress was made in the work.

On Highway 17 all the grading east of Nipigon to Schreiber was completed and 27.5 miles of paving was carried out. A grading contract from Fort William west for 5 miles was let late in the year, while a few miles west of Upsala on Highway 17, grading and culvert reconstruction work progressed well on a 11.5-mile section. The very heavy rock work east of Longbow Corners was completed

in 1961, and 10 miles of hot mix paving was laid. Late in the year, two reconstruction contracts were awarded, from Dryden east for 10.4 miles and from Longbow Corners west for 5.7 miles.

The new international bridge over the Pigeon River was finished in 1961, and the new approach and reconstruction of Highway 61 covering 5.7 miles in all were well under way.

In the latter part of the year a reconstruction contract was awarded on the 5.7 portion of Highway 598 from Porquis Junction to Ansonville.

During the year a considerable amount of work was performed on Resources and Forestry Roads, including the Savant Lake Road, Northern Lights Road, Spruce River Road, and Sioux Lookout to Superior Junction Road.

The highway from Highway 72 near Sioux Lookout to a Pine Tree Radar Station, covering slightly more than 3 miles, was largely completed in 1961.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1961-62

Hwy. No.	4-Lane Highways	Miles
401	Tilbury By-pass	4.60
401	Highway 8 to Highway 2	24.96
401	Highway 28 to Highway 45	3.00
401	Highway 45 to Grafton Interchange	4.70
401	Grafton Interchange to Highway 30	10.35
	TOTAL	47.61

Hwy. No.	2-Lane Highways	Miles
39	Tecumseh to Puce	7.02
3	New Sarum By-pass	1.14
86	Wingham By-pass	0.75
12	Gamebridge By-pass	1.36
7	Peterborough By-pass	6.79
401	Highway 16 to Iroquois County Lane	10.07
69	Parry Sound By-pass to 2 miles north of Nobel	9.68
532	Bracebridge North Limits to 3.2 miles northerly	3.20
69	Pointe-au-Baril to Magnetawan Bay	12.99
	TOTAL	100.61

SUMMARY OF NEW BRIDGES COMPLETED 1961-62

During the fiscal year 1961–62 the number of structures completed was	85

MAINTENANCE

C. TACKABERRY, P.Eng.—Maintenance Engineer

Inspection and Maintenance of Bridges

During 1961 the majority of bridges on our highways were thoroughly inspected by the Bridge Maintenance Section. From this annual inspection we formulated a bridge maintenance program of reinforcing many deficient structures. No structural failures occurred.

In a few cases old deficient structures were replaced by Bailey bridges. This not only eliminated the risk of collapsed structures, but also, in most cases, increased the carrying capacity of the crossing.

A few small low steel-truss bridges were reinforced with Bailey bridge panels.

On other bridges existing concrete decks were reinforced by coverings of laminated timber. The Fish Creek bridge at Prospect Hill on Highway 7, and Kaylors Creek bridge on Highway 2 east of Napanee, are two examples of this work.

At Wingham the western portion of the Wingham By-pass was constructed by district forces. This was necessary to remove heavy loads from the existing bridges on this portion of Highway 86. On the by-pass two long trestle-type Bailey bridges were required and will remain in use until the permanent structures are installed in a few years.

At Burks Falls and Englehart on Highway 11, the existing concrete bridge decks had deteriorated to such an extent that replacement was considered. However, by bonding new concrete to the old deck by means of epoxy resin, it was possible to rehabilitate the existing deck with little interruption to traffic.

It was found that on a number of the older steel-truss bridges, the expansion rollers had seized. This was caused mostly by age and corrosion. We have obtained good results by replacing many of these rollers with elastomeric bearings, which consist of steel plates encased in rubber. Examples of this can be seen on the Rouge River bridge on Highway 401 and the Thames River bridge on Highway 21.

The Department contracted the painting of 75 steel bridges throughout the province. Nearly 5,000 gallons of paint were used for this work. The previous method of using lamp black to give contrasting shades of aluminum paint to distinguish the first and second coats, was discontinued. In its place a leafing and non-leafing type of aluminum paint was used with success.

Department-owned Asphalt Plant

The asphalt plant organization was divided into two separate operations during 1961:

(1) The crusher and grading crews were moved to Red Lake in the Kenora District to commence grade preparation of some 30 miles of highway on which



hot mix pavement will be laid in 1962. This mileage was comprised of Secondary Highway 618, Highway 125, and approximately 12 miles of Highway 105, Red Lake southerly. Over half of the grade work was completed. Due to the scarcity of good crushing gravel in the immediate vicinity of Red Lake, it was decided to crush mine rock which was available from mine stockpiles at Red Lake. Our D.H.O. primary and secondary crushers produced 99,791 tons of granular "A" from this mine rock. An additional 26,100 tons of granular "A" was crushed from a gravel pit located 9 miles south of Red Lake on Highway 105, giving a total production of 125,891 tons of granular "A".

(2) The asphalt plant operating from a quarry five miles east of Hearst on Highway 11 in the Cochrane District and using crushed rock aggregate, previously crushed by contract, produced 87,759.85 tons of mix. This tonnage represents 45.2 miles of paved highway plus paved entrances to the weigh scale west of Hearst, paved yard at Hearst patrol headquarters, and paved decks on three bridges west of Hearst. This year saw the completion of the paving begun in late summer of 1954, of the 192-mile stretch of Highway 11 between Longlac and Kapuskasing.

Zone Painting

Operating continuously throughout the summer, our 16 single and 5 dual zone striping machines painted 10,785 miles of King's highways and secondary roads, plus 255 miles of county roads.

During the winter one single unit was replaced with a dual machine by the Downsview shop for use in the 1962 season.

Signs

Many new sections of highways were signed during the continuance of this important phase of our operation. During the year district forces erected or replaced 60,250 signs of various types and sizes, ranging from fingerboards and "Stop" signs, to the larger freeway and overhead metal signs.

Electrical

During the year from April 1, 1961 to April 1, 1962, new street lighting installations were completed at 60 locations, totalling 1,781 street lights. This includes some major projects such as 677 aluminum davit poles with mercury vapour fixtures on one section of the Ottawa Queensway, the Queen Elizabeth widening and lighting between Highways 27 and 10, involving 395 lights in one system; also the modernization of the lighting at Niagara Falls around the Oakes Gardens, government buildings, etc., using 116 fluorescent street lighting fixtures.

Traffic signals were installed, relocated, or rewired at 45 locations.

Flashing beacons were installed at 40 locations.

A number of large signs were lighted at various locations and a number of weigh scale stations were equipped with "Driver Instructions Signals," also illuminated.

In addition to the foregoing, the district electrical crews wired a large number of small buildings such as survey shacks, salt sheds, truck sheds, patrol offices, etc.

HIGHWAY LIGHTING

Installations put into Operation April 1, 1961–April 1, 1962

District 1 — Chatham

1-2-2 Jct. Hwys. 401 and 2 (west of Tilbury)
(14) 400-watt mercury vapour units (temporary).

1-401-8 Hwys. 3B and 401 (Howard Avenue), Windsor
(5) 400-watt mercury vapour units.

1-21-17 Hwy. 21 at Petrolia
(3) 400-watt mercury vapour units.

1-40-18 Hwy. 40, Talford Creek
(4) 400-watt mercury vapour units.
(6) 400-watt mercury vapour units (temporary).

1-401-2-20 Jct. Hwys. 401 and 2 (east of Tilbury)
(15) 400-watt mercury vapour units.

District 2 — London

2-4-9 Hwy. 4 and Kettle Creek on approaches to King George V lift bridge
(2) fluorescent units.

2-401-32 Hwys. 3 and 4, St. Thomas
(23) 400-watt mercury vapour units.

2-4-36 Hwy. 4, north from St. Thomas
(20) 400-watt mercury vapour units.

2-2-38 Hwy. 2 and Governor's Road
(11) 400-watt mercury vapour units.

District 3 — Stratford

3-7-8-11 Hwys. 7 and 8 By-pass at Haysville Road, New Hamburg
(11) 400-watt mercury vapour units.

3-7-8-12 Hwys. 7 and 8 By-pass at Brewery Street, Baden
(2) 400-watt mercury vapour units

3-6-13 Hwy. 6, 3 miles north of Guelph and Elora side road
(11) 400-watt mercury vapour units.

District 4 — Hamilton

4-Q.E.W.-15 Q.E.W. from Stanley Street to Niagara Falls city limits
(11) 6′ fluorescent fixtures, 385 watts each.

4-N.F.-16 Falls Avenue, River Road and Bender Hill, Niagara Falls
(73) 6′ fluorescent fixtures, 385 watts each.

4-Q.E.W.-17 Q.E.W. on Newman's Hill, Niagara Falls
(32) 6′ fluorescent fixtures, 385 watts each.

4-Q.E.W.-27 Q.E.W., Fort Erie between Central and Main
(2) 400-watt mercury vapour units.

4-Q.E.W.-26 Hwys. 2 and 53, Duff's Corner
(9) 400-watt mercury vapour units.

4-6-29 Hwy. 6 at Grand River, Caledonia
(4) 2 lamp, 6′ fluorescent lamps units.

4-403-59 Hwy. 403 (Wolfe Island Section)
(25) 400-watt mercury vapour units.

4-3-63	Hwys. 58 and 3 at Humberstone (16) 400-watt mercury vapour units.
4-3A-69	Hwys. 57 and 3, Beckett's Bridge (2) 400-watt mercury vapour units.
4-5-79	Hwy. 5 and Brock Road (2) 400-watt mercury vapour units.
4-24-82	Hwy. 24 at Half-way Corners (3) 400-watt mercury vapour units.
4-25-91	Hwy. 25 at Trafalgar Road No. 10 (2) 400-watt mercury vapour units.
4-Q.E.W.-96	Hwy. Q.E.W. and Ashland Avenue, St. Catharines (2) 400-watt mercury vapour units.
4-2-6-62	Hwys. 6 and 2, Wolfe Island (16) 400-watt mercury vapour units.

District 5 — Owen Sound

5-92-3	Hwy. 92, Nottawasaga bridge, Wasaga Beach (8) 400-watt mercury vapour units

District 6 — Toronto

6-7-64	Hwys. 7 and 10, north of Brampton (16) 400-watt mercury vapour units.
6-401-69	Hwy. 401 and Ajax, Harwood Avenue (31) 400-watt mercury vapour units.
6-Q.E.W.-73	Q.E.W., from Hwy. 27 to Hwy. 10 (Contract No. 60296) (395) 400-watt mercury vapour units.
6-9-10-81	Hwys. 9 and 10, Orangeville (16) 400-watt mercury vapour units.
6-401-93	Hwy. 401 and Leslie Street, south east leg (6) 400-watt mercury vapour units.
6-401-96	Hwy. 401 and Hogg's Hollow bridge, west-bound lane (16) 400-watt mercury vapour units.
6-401-98	Hwy. 401 and Hogg's Hollow bridge detour (9) 400-watt mercury vapour units (temporary).
6-10-51-87	Hwys. 10 and 51, town of Caledon (21) 2 lamp, 4′ fluorescent fixture (50% D.H.O. Cost).

District 7 — Port Hope

7-401-16	Hwy. 401 and Mill Street, Newcastle (12) 400-watt mercury vapour units.
7-115-28-19	Hwys. 28 and 115 (13) 400-watt mercury vapour units.
7-7-14-20	Hwy. 7 and Marmora bridge (2) 400-watt mercury vapour units.
7-7-28-21	Hwys. 7 and 28, west end of Peterborough (18) 400-watt mercury vapour units.

District 8 Kingston

8-2-11	Hwys. 2 and 15, east of Kingston (10) 400-watt mercury vapour units.

8-7-38-15 Hwy. 7 at Sharbot Lake
(12) 400-watt mercury vapour units.

8-2-16 Hwy. 2 at Odessa
(5) 400-watt mercury vapour units.

District 9 — Ottawa

9-Q-9 Queensway intersections at Kirkwood, Carling, Jct. Hwys. 7 and 15, Island Park Drive, Green's Creek and Blair Road
(667) 400-watt mercury vapour units.

9-2-16 Hwy. 2 and Carmen Road
(15) 400-watt mercury vapour units.

9-15-29-29 7-15-29, Carleton Place By-pass
(13) 400-watt mercury vapour units.

District 11 — Huntsville

11-12B-24 Hwy. 12B, Gill Street, town of Orillia
(8) 400-watt mercury vapour units.

11-12-22 Hwy. 12 and Coldwater By-pass, west end
(3) 400-watt mercury vapour units.

11-12-23 Hwy. 12 and Coldwater By-pass, east end
(12) 400-watt mercury vapour units.

District 13 — North Bay

13-17-2 Hwys. 17 and 11, North Bay By-pass (Fisher Street)
(15) 400-watt mercury vapour units.

13-11-7 Hwys. 11 and 534 at Powassan
(2) 400-watt mercury vapour units.

13-11-15 Hwys. 11 and 522, Trout Creek
(3) 400-watt mercury vapour units.

13-11-17 Hwy. 11 and Birches Road
(6) 400-watt mercury vapour units.

District 14 — New Liskeard

14-11-67-3 Hwys. 11 and 67, Porquis Junction, north
(20) 400-watt mercury vapour units.

District 16 — Cochrane

16-11-4 Hwy. 11 and First Street, Cochrane
(19) 400-watt mercury vapour units.

District 17 — Sudbury

17-17-2 Hwys. 17 and 536, Creighton Mine, Sudbury
(12) 400-watt mercury vapour units.

17-17-4 Hwy. 17 and Power Street, Sudbury
(18) 400-watt mercury vapour units.

17-17-5 Hwy. 17 and Balsam Street, Sudbury
(16) 400-watt mercury vapour units.

17-17-68-11 Hwys. 17 and 68, Espanola
(11) 400-watt mercury vapour units.

TRAFFIC SIGNALS

Installations put into Operation April 1, 1961–April 1, 1962

District 1 — Chatham

1-2-5	Hwys. 2 and 21, Thamesville, fixed time.
1-3B-21	Hwy. 3B at Cabana Road, traffic actuated.
1-2-401-4	Hwys. 2 and 401, west of Tilbury, fixed time (temporary).
1-3-2	Hwy. 3 and Walker Road, Windsor, rewired for new sequence.
1-2-3	Hwy. 2 and Walker Road, Windsor, rewired for new sequence.
1-2-6	Hwy. 2 and Queen Street, Tilbury, rewired for new sequence.
1-39-26	Hwy. 39 at St. Theresa School, rewired for new sequence.
1-3-1	Hwys. 3B and 3, Windsor, rewired and installed new detector.
1-3-10	Hwys. 3 and 39, Windsor, rewired and installed new detector.

District 2 — London

2-2-9	Hwy. 2 and Commissioner's Road, fully actuated.
2-4-10	Hwy. 4 and Dingman Creek bridge (temporary).

District 3 — Stratford

3-24-3	Hwy. 24, Hespeler, fixed time.
3-86-6	Hwy. 86, Zetland bridge, Wingham (temporary)

District 4 — Hamilton

4-Q.E.W.-8	Q.E.W. and Welland Avenue, St. Catharines, fixed time.
4-5-50	Hwys. 5 and 25, Palermo, traffic actuated.
4-6-52	Hwy. 6 at Hagersville, fully traffic actuated.
4-58-53	Hwys. 20 and 58, Turner Corners, traffic actuated.
4-20-54	Hwy. 20 and Montrose Road, Niagara Falls, traffic actuated.
4-58-55	Hwy. 58 and Broadway Avenue, fully traffic actuated.
4-2-6-62	Hwys. 6 and 2, Wolfe Island, fully traffic actuated.

District 6 — Toronto

6-5-13	Hwys. 5 and 10, Cooksville, fixed time, revised.
6-7-24	Hwys. 7 and 50, converted to fully traffic actuated.
6-2-26	Hwy. 2 and Dixie Road, fully traffic actuated, (semi-relocated).
6-11-32	Hwy. 11 and Eagle Avenue, fully traffic actuated.
6-7-58	Hwys. 7 and 10, Brampton.
6-2-60	Hwy. 2 and Cawthra Road, rewired for new timer.
6-401-62	Hwy. 401 at Harwood Avenue, Ajax, semi-traffic actuated.
6-10-63	Hwy. 10 and Derry west, fully traffic actuated (revision).
6-11-64	Hwy. 11 and Meadowview, fully traffic actuated, (semi-relocated).
6-7-68	Hwy. 7 and Keele Street, fully traffic actuated, (semi-relocated).
6-401-72	Hwy. 401 and Keele Street, fixed time, with traffic actuation adaption.
6-2-83	Hwy. 2 and Shaw Drive, fully traffic actuated.
6-2-89	Hwy. 2 and Stavebank Road, fixed time.
6-401-91	Hwy. 401 and Leslie Street, semi-traffic actuated.
6-10-94	Hwy. 10 detour via Cawthra Road, north service road, fixed time (temporary)
6-10-94	Hwy. 10 detour via Cawthra Road, south service road, fixed time (temporary).

6-7-95 Hwy. 7 and Haul Road detour, fixed time (temporary).
6-11-98 Hwy. 11 and King City side road, fully traffic actuated.
6-11-103 Hwys. 11 and 88, Bradford, fixed time.
6-401-104 Hwy. 401, south east ramp, Victoria Park Avenue, semi-actuated.
6-7-24 Hwys. 7 and 50, revision.

District 7 — Port Hope
7-14-1 Hwy. 14, Belleville Bay bridge.
7-401-7 Hwy. 401 and Courtice Road detour, west of Bowmanville, fixed time (temporary).

District 13 — North Bay
13-17-4 Hwys. 17B, 17, and 11 on North Bay By-pass (Fisher Street), fully traffic actuated.

District 14 — New Liskeard
14-11-1 Hwy. 11, south of Englehart (Blanch River bridge), (temporary).

FLASHER BEACONS

Installations put into Operation April 1, 1961–April 1, 1962

District 1 — Chatham
1-7-82-13 Hwys. 7 and 82
(1) red pedestal flasher.
1-401-3B-15 Hwy. 3B at Cameron Road, Windsor.
1-3-16 Hwy. 3 at Cabana Road
(1) amber flasher on pedestal.
1-2-17 Hwy. 2 at Howard-Harwich townline
(2) amber flashers on pedestal.

District 2 — London
2-2-18 Hwys. 2 and 5, east of Paris
(1) amber flasher with sign light on pedestal.
2-2-30 Hwy. 2 and Governor's Road
(1) red flasher with sign light on stop sign.
2-2-4-32 Hwys. 2 and 4 at Commissioner's Road
(2) amber flasher heads.

District 3 — Stratford
3-8-20 Hwy. 8 and Shantz Hill
(2) amber flasher heads on pedestal.

District 4 — Hamilton
4-Q.E.W.-11 Q.E.W., bottom of St. David's Hill
(2) amber heads (detour).
4-2-44 Hwy. 53 at Duff's Corners
(1) amber blvd. head on pedestal.
4-20-53 Hwy. 20 and Meed Street, Stoney Creek
(2) red blvd. heads on pedestal.

4-3-57-62	Hwys. 57 and 3A, Beckett's Bridge (1) red blvd. head on stop sign pedestal.
4-99-63	Hwy. 99 at Hogg's back (2) amber flasher heads on pedestal.

District 5 — Owen Sound

5-9-1	Hwys. 9 and 6, Arthur (2) red flashers (revised).
5-93-3	Hwy. 93 and Jct. county road at Waverley (1) red flasher.
5-6-5	Hwys. 6 and 21, Alvanley Jct., 10 miles west of Owen Sound (1) red flasher (revised).
5-4-9-14	Hwys. 4 and 9, north side, 3 miles west of Walkerton red flasher.
5-21-15	Hwy. 21 and No. 6 Sideroad, 6 miles south of Port Elgin red flasher.
5-26-18	Hwy. 26 and county road, 5 miles north of Stayner red flasher.

District 6 — Toronto

6-9-10-57	Hwys. 9 and 10, Orangeville (1) red flasher head on pedestal.
6-401-2A-58	Hwys. 401 and 2A (1) amber flasher head, on warning sign.
6-Q.E.W.-61	Q.E.W. and Dixie Road Plaza, south (2) amber flasher heads on pedestals.
6-Q.E.W.-62	Q.E.W. and Cawthra Road, north (1) flasher head, amber on pedestal.
6-48-63	Hwy. 48 and C.P.R. bridge (2) flasher heads, amber on pedestal.
6-Q.E.W.-64	Q.E.W. and Cawthra Road, south (2) flasher heads, amber on pedestal.

District 7 — Port Hope

7-28-22	Hwys. 7 and 28, Peterborough By-pass (1) red flasher head on pedestal.
7-35-24	Hwys. 121 and 35, Powles Corners (1) red flasher head on pedestal.
7-7-25	Hwy. 7 and River Road, Peterborough By-pass (2) two-way amber.

District 8 — Kingston

8-2-4	Hwys. 2 and 15 at R.M.C. (2) amber flasher head on pedestal.
8-2-6	Hwy. 2 at Crystal Beach (2) amber flasher heads on pedestal.
8-16-20	Hwy. 16 at Johnstown (1) red flasher on pedestal.
8-2-21	Hwy. 2 at Odessa and Mud Lake Road (1) red flasher on pedestal.

District 9 — Ottawa

9-2-9 Hwys. 2 and 16, Johnstown
(1) red flasher on pedestal.

9-29-12 Hwys. 29, 15 and 15B, Carleton Place
(1) red flasher.

9-17-17 Hwy. 17 Queensway, Green's Creek area
(1) amber flasher on pedestal.

District 10 — Bancroft

10-62-2 Hwy. 62, Eldorado
(1) amber flasher head on pedestal.

District 13 — North Bay

13-17-2 Hwys. 17, 17B and 11, North Bay (Fisher Street)
(2) red flashers.

District 17 — Sudbury

17-17-1 Hwys. 17 and 68, west of Espanola
(1) red flasher head on pedestal.

17-17-2 Hwy. 17 and Balsam Street, Copper Cliff
(1) amber flasher on pedestal.

17-17-3 Hwy. 17 and Power Street, Copper Cliff
(1) amber flasher on pedestal.

SIGN LIGHTING

Installations put into Operation April 1, 1961–March 31, 1962

District 2 — London

2-3-4-4 Hwys. 3 and 4
(2) 8′ fluorescent fixtures.

District 4 — Hamilton

4-401-10 Hwys. 401 and 6
(2) 8′ fluorescent fixtures.

4-401-11 Hwys. 401 and 8
(2) 8′ fluorescent fixtures.

District 6 — Toronto

6-Q.E.W.-34 Q.E.W. and 5th line traffic circle
(4) 6′ and
(8) 8′ fluorescent fixtures.

6-Q.E.W.-33 Q.E.W. and Cawthra Road, north side
(3) sign lights on pedestals.

6-401-2-32 Hwys. 401 and 2A
(1) 6′ fluorescent fixture.

6-401-2-35 Hwy. 401 and Harwood Avenue, Ajax
(1) sign light on pedestal.

District 7 — Port Hope

7-401-115-3 Hwys. 401 and 115
(4) 8′ fluorescent fixtures.

7-401-2-4	Hwys. 401 and 2, Welcome (2) 8′ fluorescent fixtures.

DISTRICT 8 — KINGSTON

8-2-1	Hwys. 2 and 15 at R.M.C. (2) 8′ fluorescent fixtures.
8-401-2-2	Hwys. 2 and 401 at Crystal Beach (2) 8′ fluorescent fixtures.

DISTRICT 9 — OTTAWA

9-7-15-29-1	Hwys. 7, 15 and 29, Carleton Place — 1 unit (2) 48″ fluorescent lamps (2) 36″ fluorescent lamps.
9-Q-2	Queensway, Carling and Kirkwood Avenue (2) 6′ fluorescent fixtures (4) 8′ fluorescent fixtures.
9-Q-3	Queensway and Pinecrest interchange (2) 8′ fluorescent fixtures.
9-Q-15-7-4	Queensway, Jct. Hwys. 15 and 7 (2) 8′ fluorescent fixtures.
9-Q-5	Queensway and Green's Creek area (2) 8′ fluorescent fixtures.

Forestry

A total of 112,732 trees and shrubs were planted throughout the province during the year. The amount of planting reached a new high over recent years.

The Department's "Tree Saver" machine was active again in saving and relocating trees affected by construction. Operations in ten districts relocated 974 mature trees.

Considerable progress has been made in retaining natural tree growth within the right-of-way. This will result in reduced need for tree planting projects and will provide more mature trees for immediate effect.

Grass seeding operations remained consistent with the past five years. A total of 5,045 acres or 24,417,800 square yards were seeded.

Excellent progress was made in chemical brush control in the northern districts. Combined weed and brush spraying covered a total of 7,169 miles.

Recent test work with soil sterilants has brought about recommendation for standard maintenance practice. Unwanted growth can be controlled in three locations, (1) gravel shoulders of the median, (2) around guide rail, and (3) around tree plantings.

District forestry crews were active in removing dead and dangerous trees to safeguard the travelling public. In Districts 1 to 9, some 7,204 trees were removed. The removal of stumps by mechanical stumping machines, has facilitated mowing operations and improved the appearance of the roadsides in many areas.

Weigh Scales

Eight new scales were installed in 1961 at the following locations:

District 4 — Q.E.W. at Winona
30-ton, 40′ x 10′ platform scale was replaced by 30-ton, 12′ x 10′ axle load.

District 6 — Hwy. 401, 5 miles west of Jct. Hwy. 10, north side
30-ton, 12′ x 10′ axle load.

District 6 — Hwy. 401, 5 miles west of Jct. Hwy. 10, south side
30-ton, 12′ x 10′ axle load.

District 6 — Hwy. 10 at Victoria, north of Brampton
30-ton, 12′ x 10′ axle load.

District 11 — Hwy. 69 south of Jct. Hwy. 124, Parry Sound
30-ton, 10′ x 10′ replaced by 30-ton, 12′ x 10′ axle load.

District 16 — Hwy. 11 at Cochrane
30-ton, 10′ x 10′ platform scale replaced by 30-ton, 12′ x 10′ axle load.

District 18 — Hwy. 17, 5 miles north of Sault Ste. Marie
30-ton, 40′ x 10′ platform scale replaced by 30-ton, 12′ x 10′ axle load.

District 19 — Hwy. 11 north of Jct. Hwys. 11 and 17, Nipigon
30-ton, 12′ x 10′ axle load.

Pavement Maintenance

The two new operations, added to our pavement maintenance techniques in 1960, were continued with great success in 1961.

The "Pavement De-Slicker" was kept in operation throughout the summer, treating flushed and slippery sections on various highways throughout the province.

A new and more mobile burner was constructed by the Downsview shop during the summer and was put into operation in September. This machine is self-contained on one truck, enabling the unit to travel long distances on its own, whereas the first burner could not be loaded on its own carrier necessitating the use of a low-bed trailer when moved from job to job.

The Dix-Seal treatment of pavement surfaces which was begun in 1960, proved very satisfactory and was continued on many sections of highway in 1961. Other similar mixes have been brought to the Department's attention and it is expected that experimental sections using these mixes will be tried in 1962.

Winter Maintenance

The winter of 1961–62 was considered to be average for most districts in the province. Southern Ontario experienced a fairly heavy snowfall up to the end of February with very little in March. The early spring enabled these districts to get an early start on spring maintenance. The northern districts, however, had a cold, wet spring.

The winter works program was more extensive than in 1960. The districts

were successful in carrying out projects such as clearing, grubbing, grading, rock excavation, granular base, fencing, bridge repairs, and reconstruction.

The continuance of the joint Provincial and Dominion Government Program for the development of picnic sites as an employment program, resulted in 100 sites being improved or developed. The Dominion Government contributed 50 per cent of the labour cost of this work.

TABLE SHOWING TOTALS OF WORK DONE, 1961-62

Class of Work	Number	Tons	Miles
Automatic signals at railway crossings	38	.....	.....
Bituminous hot mix pavement	.....	1,799,403.03	520.23
Bituminous mulch and cold mix	.....	138,035.00	701.82
Bituminous prime on gravel roads (gals.)	1,727,553.90	57,399.45 (sand)	638.13
Bituminous resurfacing old pavement	.....	161,923.74	930.19
Bituminous surface treatment (gals.)	1,150,561	64,085.09 (chips)	471.94
Bridges built	85	.....	.....
Bridges painted	70	.....	.....
Calcium dust layer on gravel roads	.....	7,683.78	858.18
Calcium for de-icing roads	.....	82.85	20.00
Concrete base pavement, asphalt top	.....	20,151.00	8.47
Concrete pavement (sq. yds.)	605,194	.....	42.20
Crushed gravel and stone (by contract)	.....	6,206,095.21	1,228.55
Crushed gravel and stone (by Dept. forces)	.....	871,188.02	7,622.49
Grading and culverts	.....	.....	506.91
Granular base on new grading	.....	13,486,969.18	553.46
Granular base on old grading	.....	831,621.00	1,055.93
New buildings erected this year	57	.....	.....
Off-road parks maintained	165	.....	.....
Roads snowploughed and kept open (King's Hwys.)	.....	.....	10,284.38
Roads snowploughed and kept open (Sec. Hwys.)	.....	.....	2,759.53
Roadside picnic places maintained			825.00
Routine maintenance (King's Hwys.)			10,249.88
Routine maintenance (Sec. Hwys.)	.....	.....	2,748.53
Salt for de-icing roads (raw)	.....	149,996.35	4,040.38
Salt in sand stockpiled	.....	57,351.22	.....
Sand for winter maintenance		900,223.36	
Scale houses maintained	41	.....	.....
Seeding by department forces (acres)	4,504.78	.....	.....
Shrubs received and planted	86,836	.....	.....
Signs newly erected or replaced	71,144	.....	.....
Snow hedges planted this year	.....	.....	15.12
Snow fence erected, dismantled, stored	.....	.....	957.48
Traffic lights installed this year	31	.....	.....
Weed control	.....	.....	6,677.03
Zone painting (King's Hwys.) (gals.)	103,400	.....	9,792.45
Zone painting (Sec. Hwys.) (gals.)	9,599.25	.....	635.58
Development roads built			76.73

CONTRACT WORK FOR 1961-62

T. C. MUIR, P.Eng.—Contract Control Engineer

The number of contracts of all types awarded this year exceeded the previous year's by some six per cent, wherein 367 contracts were called this year as compared to the 348 contracts awarded of the previous year. However, there was an actual monetary reduction in the total value of the contracts awarded of approximately 13 per cent.

The Department instigated a qualification procedure in 1957, and since that date the number of contracts called under pre-qualification has expanded considerably. In 1959, pre-qualification was applicable to 70 per cent by dollar

volume of all contracts called that year, which was expanded in 1960 to 84.5 per cent and this year has been further increased to 95 per cent. This indicates the Department's appreciation of the necessity for having contracts pre-qualified prior to bidding, on certain types of contracts.

In 1956 the Department introduced, on a trial basis, a principle on what is known as Liquidated Damages, and last year approximately 80 per cent of the total number of contracts called that year contained Liquidated Damages, further indicating the Department's approval of such a procedure in its contracts since it served the purpose of having contracts completed on time and incurred the least amount of overhead cost to the Department for supervision of construction. This year the percentage of contracts containing Liquidated Damages has been further increased to 88 per cent.

A procedure was established in 1958 for the calling of invitation bids where time was of the absolute essence and where the work was somewhat restrictive in its nature, also on a trial basis. The procedure has proved very effective, and this year some 59 contracts have been called under this procedure.

Further contracts were called under what is known as an Equipment Rental Contract, wherein the Department calls for tenders for certain types of equipment for a certain period of time to carry out projects that do not require exhaustive field surveys and office designs. This was found most applicable to Resources and Mining Roads. Due to the establishment of the Forest and Access Roads and Trails Program the Equipment Rental procedure was applied to two clearing contracts under this programme with commendable results.

The following is a summary of the contract work awarded for 1961–62.

Type of Work	Total
MAINTENANCE	
Prime Dust Layer	8
Crushed Gravel (including 21 capital contracts)	72
Hot Mix Patching	17
Resurfacing	2
Surface Treatment	13
Winter Sanding	20
Screened Sand	12
Bridge Painting	15
Calcium Chloride Apply	2
TOTAL	161
CONSTRUCTION	
Concrete Paving	2
Grading and Culverts	30
Hot Mix Paving	47
Structures	70
Structural Steel	31
Resurfacing	
Miscellaneous	26
TOTAL	206
GRAND TOTAL — MAINTENANCE, CONSTRUCTION	367

MATERIALS AND RESEARCH DIVISION

A. RUTKA, P.Eng., *Materials and Research Engineer*

The Materials and Research Division is responsible for maintaining standard methods of quality control and inspection, performing material testing, reporting on materials furnished for highway construction, conducting special investigations to determine causes of failures, carrying out research aimed at developing new tests and construction techniques, training and providing information to other engineering personnel and co-operating with similar organizations in Canada and abroad.

Participation in courses sponsored by the training committee was continued, the division supplying instructors for the various courses in the fields of asphalt, soils and concrete. The courses were extended to include representatives from the municipalities.

Regional quality control supervisors provided instruction in the technology of concrete construction and control in Chatham, London, Stratford, Toronto, Ottawa and Sudbury districts; the fundamentals of soil mechanics were explained to chainmen and rodmen at Ottawa as a development stage for soils inspection; two evening lectures were given engineering staff of the city of London; township road superintendents were addressed in nine counties and lectures plus exhibits were provided at the O.G.R.A.'s T. J. Mahoney Road School in May and at the convention in February.

"Pore Size and Field Frost Performance of Soils" was the title of a paper given at the annual meeting of the Highway Research Board. At the 6th annual conference of the Canadian Technical Asphalt Association, one of our bituminous engineers presented a paper on "Laboratory Evaluation of the Causes of Asphalt Pavement Defects," and a report on "Bridge Abutment Movements due to Artesian Pressures at Depth" was presented at the 42nd convention of the Canadian Good Roads Association at Banff, Alberta. All three papers were later published and distributed to interested parties.

The Division is divided into seven engineering sections, and the work performed by each section follows:

Physical Laboratory Section

With the engagement of a metals and miscellaneous materials engineer, considerably more attention was given to metals and associated products. Old specifications were revised, new specifications were written, testing was increased and inspection generally broadened. Inspections were conducted at the plants of 49 manufacturers; investigations were conducted and consultations held on twelve different manufactured products and 429 tests were performed on seventeen products, such as guide rails, grader blades, snowplough shoes, cables and structural steel.

The operations performed in the regional laboratories was expanded with the addition of bituminous mix design equipment. Mobile bituminous compaction units were also established on a regional basis to provide on-site control. The operation of the mobile bituminous mix design laboratory was continued and was of material assistance in specific problem areas.

The improved quality control measures instituted were reflected in the volume and variety of the work required of the section. While the Central Laboratory again showed a general increase, the increase in the Regional and Mobile Laboratories was in excess of 100 per cent.

In addition to the routine operations performed in the Central Laboratory, development and investigational testing was maintained at a high level, resulting in the establishment of new testing procedures, specifications, and construction techniques. Programs instituted or continued included projects to evaluate joint fillers and sealants, anti-sealants, bonding and patching agents, alkali-reactivity and freeze-thaw durability of aggregates, etc.

Chemical Section

Technical assistance on problems associated with materials requiring chemical analysis increased in quantity and scope. This was evident in the number and variety of samples tested, specifications written or revised and the technical information provided to field staff and municipalities.

Twenty-five special "long term" evaluations were either initiated or completed, providing data to overcome problems ranging from porcupine attack on guiderail posts, tree and shrub killing, to fluorescent nylon safety clothing. Consultations with district staff resulted in recommendations on queries such as contaminated wells, patrol yard alterations, bridge and traffic paint applications.

Materials Section

This section's responsibility is divided into three main objectives, namely: location and appraisal of granular deposits for pre-engineering; quality control of materials from local and commercially operated deposits for bituminous and concrete construction; provision of quality control service on bituminous and concrete contracts.

In pre-engineering granular location, a general increase was evident in the volume of investigations completed with concentration placed on the Woodstock and Cornwall portions of Highway 401. More than 300 gravel deposits were investigated with heavy power equipment such as gradall and backhoe, and over 1,400 aggregate samples were tested to obtain information for strip map preparation.

Geologists appraise all established and potential commercial aggregate operations. This year over 1,000 samples were taken from commercial sources, representing a 30 per cent increase over the previous year. To ensure specification products, assistance was given to quarry and pit operators on items such as areas to be worked, equipment set up, screen sizes, and production methods.

Quality control and technical assistance was provided on 81 paving contracts and 10 municipal projects, which involved the laying of hot mix asphalt in excess of 1.5 million tons. The introduction of the mobile compaction laboratories mentioned earlier resulted in close compaction control and on-the-site adjustments of mixes.

The requirement of a surface course trial area was initiated and has materially assisted in obtaining a smoother, more uniform riding surface.

A comprehensive quality control service by supervising inspectors and engineers, together with technical advice on problems concerned with the design, construction and maintenance of concrete pavements and structures, was provided. The high standard in riding quality achieved by the new construction techniques introduced in recent years, has continued.

The Department's plan for approving ready-mixed concrete operations prior to use on Department contracts, was begun on a trial basis, and it appears to be leading to a general improvement in the quality of ready-mixed concrete.

Investigations into field problems on concrete has led to work on grouting of hollow precast piles; protection of concrete placed in winter; sealing of joints particularly in bridge decks; use of surface coatings to give concrete extra protection against the deleterious effects of de-icing salts; quality of slag aggregates; methods of mechanically finishing concrete bridge decks; and many others.

The development of methods of restoring older concrete structures that have deteriorated due to weathering and de-icing salts, has continued. Very satisfactory repairs using epoxy resins as bonding agents and crack sealers have been made.

Soils Section

Soils design and investigations on pre-engineering continued with the same degree of urgency and volume required to meet the scheduled program of the Department. During the year, 497 miles of highway were investigated by manual and power equipment; soils designs were completed on 160 projects for 650 miles of scheduled operations. The soils inspection staff throughout the province provided technical advice and quality control inspection on 949 miles of grading construction. Co-operative effort with the district forces resulted in the reporting of 13,199 compaction checks.

Every year, during the winter and early spring, surveys are conducted for frost heaves and general performance on new and old contracts. A total of 1,932 miles were covered during this fiscal year.

Of special note in the Central Region was construction performed on Highway 403 (Chedoke Expressway) and Highway 405, the link between the Skyway of Homer and the international bridge at Queenston. Many unusual problems were encountered, such as the construction of a roadbed over old garbage, which itself rests on low strength alluvial material; three embankments over 70 feet in height across soft creek beds; dredging to a depth of 50 feet of organic silt for the construction under water of an embankment composed of highly weathered shale.

When hand or power auger equipment cannot be utilized for soil investigations due to bouldery till overburden, or when it is necessary to ascertain the irregularities of underlying bedrock, seismic equipment is brought into use. Since the introduction of this equipment it has proven to be a considerable asset in such determinations.

Since a qualified interpreter was obtained, greater use is now being made of air photo interpretation. The preliminary interpretation will aid considerably in locating suitable construction materials and pin-pointing problem areas requiring detailed investigations.

Foundations Section

Subsoil investigations, many of which were in difficult foundation soils, were conducted on 122 sites by the Foundations Section. The majority were performed in Southern Ontario and 15,539 feet of drilling in soil, 1,200 feet in rock and 9,491 feet of dynamic cone penetration was carried out.

The work load continued to be beyond the capacity of the present staff necessitating an additional 25 investigations be allotted to consulting firms. Two embankments were constructed for settlement analysis, 11 pile load tests performed, one piezometer installation undertaken and a slope movement measurement made with a slope indicator.

Office Engineer's Section

This section maintains a complete inventory of all known granular deposits in the province, regarding such details as specific location, quantity, quality and physical working conditions.

Samples are evaluated regularly on 150 approved commercial sources to ensure the use of quality aggregate. In the 12 months under review 6,500 soil and granular samples were evaluated, recorded and reported, and 160 folders, which listed over 4,000 deposits, were prepared for field staff review.

Development and Research Section

During the year, this section was greatly strengthened by the recruitment of three professional staff members, one chemist experienced in petroleum products, one engineer with graduate training in soil mechanics, and one geologist. This increase in staff permitted a marked broadening of the fields under active study. Some of the projects are being carried out directly by members of the section while others, requiring larger resources of staff and facilities, are co-operative ventures with other sections of the division; examples of current projects are described in the following paragraphs.

Pavement Evaluation

Since 1959 all King's highways except parts of Highways 11, 17, 71 and 61 in the Fort William and Kenora districts, have been tested for structural strength using the Benkelman Beam, and have been rated by a special performance rating panel.

In addition to the inventory work which is all done during the fall when the pavements are in their strongest condition, frequent tests have been made on a number of selected sections of pavements in the southwest and southeast of the province to study the seasonal changes in pavement strength which occur on different types of pavements on various soils.

Some preliminary work has also been carried out on a design method for pavement strengthening which makes use of the Benkelman Beam test results to estimate the additional thickness of pavement required to ensure adequate pavement strength throughout the year. The procedure is also applicable to the design of new pavements, and shows considerable promise.

Asphalt Problems

Arrangements have been made to have all information on asphalt pavement, collected during the mix design and construction period, recorded on punched cards together with the results of annual rating surveys. This will make it possible to analyze the information, once a sufficient volume is available, to identify those factors which have the greatest influence on the performance of asphalt pavements in Ontario.

Field studies were made to determine the magnitude of the variations in mix proportions, temperature, dryness, etc., which occur in practice with various types of mixing plant. The results will have a direct bearing on future specification revisions.

Aggregates

Over a large area of southwestern Ontario the available gravels are contaminated with chert or cherty material, which causes premature deterioration of asphalt and concrete pavements and concrete structures.

A detailed study of chert has been initiated with a view to identifying and classifying the various varieties encountered, and subsequently to establish the limiting quantities of the various varieties which may be present in roadmaking aggregates without risk of early deterioration.

Special Tests

The B.P.R. Roughometer is used to measure the riding quality of new sections of road and to detect any deterioration in riding quality which takes place as the roads get older.

Further experience has been gained with the nuclear equipment for measuring soil moisture content and density and operating procedures have been evolved for their use on soils and granular materials. At the present time no satisfactory method has been found for using the equipment on asphaltic materials.

Highway engineers in North America are becoming increasingly conscious of the skidding characteristics of pavements and equipment has been obtained which permits this surface to be measured properly. To date, several sites have been tested at the request of districts, but most of the testing has been devoted to a survey of surface conditions on pavements around the Toronto area. The tests will be continued.

Soil Stabilization

The most important stabilization job so far undertaken in the province was carried out on the newly completed section of Highway 401 near Eastwood. The granular base on approximately 2 miles of the eastbound lanes was stabilized with cement and surfaced with the standard three-course asphalt pavement. Some transverse cracks developed in the asphalt during the winter. This cracking was expected. The performance of this section of pavement will be carefully compared with that of adjacent sections of normal flexible construction, but it is expected to be several years before proper conclusion can be drawn from the comparison.

Advice and assistance has been given to several county and township engineers

contemplating soil-cement construction, and one job was successfully completed in the township of Bosanquet.

Air-entraining and Water-reducing Admixtures

Toward the end of the year, laboratory testing was begun to determine the ability of various concrete admixtures to consistently develop a satisfactory air void system and to correlate the void system with freeze-thaw and scaling resistance. The program continues.

Joint Sealers and Fillers

As part of a continuing program to establish the requirements of joint fillers and joint sealants, an evaluation was completed on the fillers available in Ontario. A report was published toward the end of the year and further testing on the joint sealers continues.

Other development and investigational projects still under review are:

(a) An evaluation of 18 different concrete repair materials.

(b) A simple boiling technique so that 28-day compressive strength of standard concrete cylinders might be predicted in one day.

(c) Evaluation of the rock prism test as a means of identifying alkali reactive aggregates.

(d) Effectiveness of various concrete surface sealers in preventing scaling and freeze-thaw deterioration of concrete.

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA QUEENSWAY, 1961–62

T. C. MUIR, P.Eng., *Contract Control Engineer*

In the previous year considerable impetus was given to the completion of approximately 114 miles of paving in what was known as the "Gap" area, Agawa River to Marathon. However, in this year the construction work was reduced somewhat to a more normal rate of construction per year.

The number of miles of grading completed this year was 82 miles versus 105 miles of the previous year; the miles of paving completed this year was 180 miles versus 195 miles; and the number of structures this year was 15 versus 20 in the previous year.

The important works carried out this year on the Trans-Canada Highway was as follows:

The construction of the Ottawa Queensway maintained its pace, with good progress being made. The Ottawa Queensway is being carried out under an agreement of March 19, 1957, between Canada, Ontario, National Capital Commission, and the city of Ottawa, as participants.

In respect to Stage 2 of this agreement, the section from Highway 15 to Carling Avenue was opened to traffic.

On Stage 3 of the Queensway project, between Carling Avenue and to Bell Street, of the two earth grading and structure contracts awarded in 1960, one contract was completed, with the other contract to be completed in 1962. In respect to this stage, one contract for grading and structure was awarded in mid-1961 and at the present time is 50 per cent complete and will be completed in 1962.

Highway 7 received base course paving on a rebuilt 10-mile section west of Highway 38, and good progress was made on a heavy rock grading contract from Kaladar easterly for 8.6 miles. On this same highway hot mix paving was completed from Sharbot Creek westerly for 9.84 miles.

In respect to Highway 12 of the Trans-Canada Highway, considerable progress was made by the completion of the grading and paving of 6.3 miles between the villages of Greenbank and Blackwater, along with a structure over the Beaverton River. An important project completed this year on this Highway 12 was the paving of the Gamebridge By-pass, together with the structure over the Trent Canal.

On Highway 69, base course paving and grading was completed from 10 miles south of Parry Sound to 2 miles north of Nobel, and this work included the completion of the Parry Sound By-pass and the new bridge over the Seguin River. The paving work completed was for the base course only, in order to allow opening to the travelling public in the late fall. Further paving of this highway from Pointe-au-Baril to Magnetawan River was also completed.

In the Department of Highways Sault Ste. Marie District on Highway 17, 10 miles of grading and hot mix paving were completed east and west of Blind River, together with approximately 10 miles from Echo Bay easterly, and the

completion of approximately 24 miles of this highway from Sault Ste. Marie northerly.

In the Fort William District of the Department of Highways on Highway 17, east of Fort William, further work was carried out between the Mackenzie River and Marathon, to the extent that approximately 5 miles of paving were left to be done to complete this section. In the same district, west of Fort William, grading was begun on the section 10 to 20 miles east of English River, leaving only two sections on this highway in this district, between English River easterly for 10 miles and Fort William to Kakabeka Falls, a distance of 15 miles, which both were programmed for next year's construction.

In the Kenora District, on Highway 17 the section from Longbow Corners to 5 miles west of Highway 105 was completed, including the paving.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and Culverts.....1,088.40 miles

Bituminous Hot Mix Pavement.....1,008.82 miles

Permanent Bridges and Structures built..... 143

Grading and Culverts

District	T.C. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	Q'way	Carling Ave. Interchange to Claredon Ave.	.40	.10	.30
Ottawa	Q'way	Loretta Ave. to Bell St.	.40	.....	.16
Ottawa	Q'way	Claredon Ave. to Loretta Ave.	1.08	.30	.78
Kingston	7	Sharbot Creek westerly	9.90	2.50	7.40
Port Hope	12	Gamebridge By-pass	1.36	.....	1.36
Huntsville	69	Parry Sound By-pass	3.46	1.73	1.73
Huntsville	69	Hayes Corners to Parry Sound By-pass	10.20	5.00	5.20
Huntsville	69	North end of Parry Sound By-pass to 2 mi. north of Nobel	5.88	4.70	1.88
Sudbury	17	Intersection Hwys. 17 & 68	.22	.....	.22
Sault Ste. Marie	17	Echo Bay easterly	9.66	.....	9.66
Sault Ste. Marie	17	Havilland Bay to Chippewa Falls	9.40	.....	9.40
Sault Ste. Marie	17	Blind River east and west	10.00	3.40	6.60
Fort William	17	From Schreiber to White Sand Lake	5.50	4.50	1.00
Fort William	17	From 20 mi. east of Nipigon to 10.4 mi. easterly	10.40	1.00	9.40
Fort William	17	From 10 mi. east of Nipigon to 9.73 mi. easterly	9.73	7.00	2.73
Fort William	17	Little Firesteel River to 11.53 mi. westerly	11.53	.....	6.00
Kenora	17	Longbow Corners easterly	9.00	6.60	2.40
Kenora	17	9 mi. east of Longbow Corners easterly	9.60	6.20	3.40
Kenora	17	19 mi. east of Longbow Corners easterly	11.08	.33	10.67
Kenora	17	Dryden easterly	10.44	.....	.82
Kenora	17	Longbow Corners westerly	5.73	.....	.86
		TOTALS	145.07	43.36	81.97

Bituminous Hot Mix

District	T.C. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Kingston	7	Sharbot Creek westerly	9.84	.....	9.84
Port Hope	7	Peterborough By-pass	6.79	.....	6.79
Huntsville	69	Hayes Corners to Parry Sound By-pass	10.18	.....	10.18
Huntsville	69	South end of Parry Sound By-pass to 2 mi. north of Nobel	9.68	.....	9.68
Sudbury	17	Intersection Hwys. 17 & 68	.22	.....	.22
Sudbury	69	Pointe-au-Baril to Magnetaway Bay	12.99	.....	12.99
Sault Ste. Marie	17	Sault Ste. Marie to Heyden	9.43	9.00	.43
Sault Ste. Marie	17	Heyden to Havilland Bay	14.74	14.00	.74
Sault Ste. Marie	17	Echo Bay easterly	9.66	.....	9.66
Sault Ste. Marie	17	Blind River east and west	10.00	4.00	6.00
Fort William	17	10 mi. east of Nipigon to 9.78 mi. easterly	9.78	.....	9.78
Fort William	17	Schreiber to 9.3 mi. westerly	9.31	.....	9.31
Fort William	17	25 mi. east of Nipigon to 5 mi. easterly	5.00	.....	5.00
Fort William	17	Selim Diversion to Cavers	15.68	.....	15.68
Fort William	17	Nipigon River Bridge to 10.4 mi. easterly	10.40	.....	10.40
Fort William	17	Loon Lake Rd. to Quimet	11.70	.....	11.70
Fort William	17	Amethyst to Loon Lake Rd.	8.65	.....	8.65
Fort William	17	7.5 mi. north of Jct. Hwy. 11 to Poland	19.40	.....	19.40
Kenora	17	Longbow Corners easterly	8.62	.....	8.62
Kenora	17	8.7 mi. east of Longbow Corners easterly	9.60	.....	9.60
Kenora	17	5 mi. west of Hwy. 105 westerly	11.34	5.67	5.67
		TOTALS	213.01	32.67	180.34

Granular Base (New Grading)

District	T.C. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	Q'way	Jct. of Hwys. 15 & 17 to Carling Ave. Interchange	4.20	2.10	2.10
Ottawa	Q'way	Carling Ave. to Claredon Ave.	.38	.....	.38
Kingston	7	Sharbot Creek westerly	9.90	.....	9.90
Port Hope	12	Gamebridge By-pass	1.36	.....	1.36
Port Hope	7	Peterborough By-pass	6.79	.....	6.79
Huntsville	69	Hayes Corner to Parry Sound By-pass	10.20	5.00	5.20
Huntsville	69	Parry Sound By-pass	3.46	.....	3.46
Huntsville	69	North end of Parry Sound By-pass to 2 mi. north of Nobel	5.88	4.70	1.18
Huntsville	69	C.N.R. Overhead McDougall Twp.	.08	.....	.08
Huntsville	69	South end of Parry Sound By-pass to 2 mi. north of Nobel	9.68	.....	9.68
Sault Ste. Marie	17	Echo Bay easterly	9.66	.....	9.66
Sault Ste. Marie	17	Blind River east and west	10.00	3.40	6.60
Fort William	17	Selim Diversion to Cavers	15.68	.....	15.68
Fort William	17	20 mi. east of Nipigon to 10.4 mi. easterly	10.40	1.00	9.40
Fort William	17	10 mi. east of Nipigon to 9.73 mi. easterly	9.73	7.00	2.73
Fort William	17	Little Firesteel River to 11.53 mi. westerly	11.53	.....	6.00
Kenora	17	Longbow Corners easterly	9.00	6.60	2.40
Kenora	17	9 mi. east of Longbow Corners easterly	9.57	6.20	3.37
Kenora	17	19 mi. east of Longbow Corners easterly	11.08	.....	11.00
		TOTALS	148.58	36.00	106.97

New Bridges 1961-1962

District	T.C. Hwy.	Location
Ottawa	Q'way	Merivale Road
Ottawa	Q'way	Island Park Ave.
Ottawa	Q'way	Holland Ave.
Ottawa	Q'way	Parkdale Ave.
Ottawa	Q'way	Fairmount Ave.
Ottawa	Q'way	Bayswater Ave.
Port Hope	12	Trent Canal Bridge at Gamebridge By-pass
Huntsville	69	Boyne River Bridge Extension
Huntsville	69	Boyne River Bridge
Huntsville	69	Sequin River Bridge, Parry Sound By-pass
Huntsville	69	C.N.R. Overhead McDougall Township
Fort William	17	Big Pic River 15.7 mi. north of Hemlo
Fort William	17	Gravel River 29.3 mi. south of Jct. Hwy. 11
Fort William	17	Little Gravel River 29.0 mi. south of Jct. Hwy. 11
Fort William	17	Cypress River 24.0 mi. south of Jct. Hwy. 11

TOTAL: 15 New Bridges

MINING, ACCESS, RESOURCES AND FORESTRY ROADS REPORT 1961–62

T. C. MUIR, P.Eng., *Secretary*
Mining and Access Roads Committee (*Interdepartmental*)

The Resources Roads Programme is carried out under an agreement between the Federal Government and the Province of Ontario, proposing an expenditure in northern and northwestern Ontario of $15,000,000 by March 31, 1967. Under this agreement the Department of Highways, acting as agent for the Ontario Government, will design and supervise the programme, with the costs of such works being shared between the Dominion Government and the Province of Ontario, except when private enterprises benefit directly. In this latter case the costs would be shared between the two governments and the private company involved.

The following was accomplished this year:

New Liskeard District:

Resources Road — Foleyet West

In this district two contracts were completed between Mile 20 and Mile 34, making driving possible between Foleyet and Chapleau. The placing of crushed gravel over this portion would be carried out the following year.



Chapleau-Foleyet Resources Road.

A 73-foot Glu-Lam beam structure was placed over the Shawmere River by the departmental forces, and at this site a picnic area was provided.

Mining Assistance Road

Under mining assistance from the Department of Mines further improvement was made on the access road to the Kam-Kotia Mine, a project which was shared equally between the Province and the mining company concerned.

Sault Ste. Marie District:

Resources Road — Chapleau East

Grading, culverts and granular base was placed on this road from Chapleau easterly to connect with the completed grading on this road from Foleyet west, carried out by the Department's New Liskeard District, thus providing a completed access by winter road from Foleyet to Chapleau, linking the present westerly terminus of Highway 101 at Foleyet to Highway 129 near Chapleau. A timber structure with a span of 83 feet was completed over this above section at the Nemegosenda River.

Fort William District:

Resources Road — Spruce River Road, Highway 17 (East of Port Arthur) to Cheeseman Lake — approximately 74 miles.

This project is a Resources Road project being shared equally between the Dominion Government and the Ontario Government and the Abitibi Power & Paper Company Limited.

A grading contract was completed from Mile 30 to Mile 54.5 north of Highway 17, Trans-Canada, with clearing being completed on this same section to Mile 56. Along with the completion of this grading contract a crushed gravel contract over this same section was also completed.

In this same year a clearing and grubbing contract was called and completed, to further the clearing from Mile 56 to Mile 64.5. This was done preparatory to calling a grading contract over the same section the following year.

Resources Road — Savant Lake (599) south of Highway 17 — approximately 90 miles.

A contract involving grading from Savant Lake on the Canadian National Railway at the southern terminus of Secondary Highway 599 was completed for approximately 15 miles southerly to the Sturgeon River.

From 21 miles south of Savant Lake at the southern terminus of Secondary Highway 599 to 28 miles south, a clearing and grading contract was completed over this 7-mile section, with the clearing being done during the winter months under a Winter Works Programme, the grading being completed during the construction season of 1961. Operations on this contract were hindered considerably by difficulty of access and frequent forest fires in the area.

In respect to the mileage from the Sturgeon River to 21 miles south of Savant Lake, a clearing contract was completed with the intention to proceed with

grading the following summer, the completion of which at that time would provide access to the peoples in the Pickle Crow area to Highway 17, via completed portions of the Department of Highways' work and use of private timber company roads.

Kenora District:

Resources Road — Minaki Southerly — 21.5 miles.

A contract for the placing of granular material over this project was called in May of this year and was completed, thus providing a gravelled road from Minaki to Secondary Highway 596.

Mining Assistance Road

The present road existing between Sioux Lookout and Superior Junction was extended by a further mile of road to the new bridge site for the crossing of the Sturgeon River. A contract for the crossing of the Sturgeon River was awarded and the substructure work was completed with only the deck remaining to be placed at this time. An unusual feature of the pier design, required battered piles to be braced together under water and necessitated divers to perform this type of work. The Kenora Skin Diving Club was hired for this work, using the new practice of Scuba equipment to inspect the bolting and bracing.

Miscellaneous Work

Approximately six miles of location survey was run for a road extending from Caribou Falls northerly, in order to investigate the possibilities of providing access to the nickel development at Werner Lake.

Resources Roads, 1961-62

Financed Partially by the Province under the Dominion-Provincial Roads to Resources Agreement

District	Location	Year Begun	Miles in Project	Miles Previous Years	Miles Compl. 1961–62	Miles to Compl.
New Liskeard	Foleyet west	1958	34.0	20.0	14.0	.....
Sault Ste. Marie	Chapleau east	1958	26.0	12.0	14.0	.....
Fort William	Nakina to Terrier Lake	1959	47.0	47.0	.....	.....
	Savant Lake to Hwy. 17	1959	90.0	15.0	7.0	68.0
	Hwy. 17 to vicinity of Cheeseman Lake	1959	75.0	44.0	10.5	20.5
Kenora	Minaki south	1959	21.5	21.5	.....	.....
	TOTALS		293.5	159.5	45.5	88.5

Mining and Access Roads, 1961-62
Financed Partially by the Province

New Liskeard	Kamiscotia Lake southerly	1960	15.0	5.0	5.0	5.0

Mining and Access Roads, 1962-62
Financed Entirely by the Province

Kenora	Approaches to structure over Sturgeon River at Superior Junction	1961	1.20	.....	1.0	0.20

Forestry Roads, 1961-62

By an agreement entered into between the Dominion and Provincial Governments under the Forest Access Roads and Trails Agreement dated March, 1961, the Department of Highways acting as administrative agents for the Provincial Department of Lands and Forests, completed the following:

District	Location	Type of Work Completed
Sault Ste. Marie	Dalton to Missanabie	Clearing seven miles of right-of-way
Cochrane	Hwy. 11 to one mile north of Calstock	Minor grading and granular base on 4.5 miles.
Fort William	Northern Lights Lake Road — from western terminus of Sec. Hwy. 588 to Northern Lights Lakes	(1) Minor grading, drainage and application of crushed gravel over 17 miles from Sec. Hwy. 588 westerly. (2) Clearing and grubbing from 17 miles west of Sec. Hwy. 588 for a distance of 7 miles westerly.

A further agreement was entered into between the Dominion and Provincial Governments in January 1962, extending the "Forest and Access Roads and Trails Agreement" for two years under the "Forestry Assistance" Agreement, and again the Department of Highways of Ontario would be acting as administrative agents for the Provincial Department of Lands and Forests under this new agreement.

DISTRICT No. 1—CHATHAM

G. U. HOWELL, P.Eng., District Engineer

Construction

Concrete pavement was begun and completed this year on the Tilbury By-pass section of Highway 401, a distance of 4.53 miles. The new portion of Highway 39 from Tecumseh to Puce River, a distance of 7 miles, was also completed. Both sections were opened to traffic. Grading and structure operations were begun on Highway 401 from 7 miles east of the Tilbury By-pass easterly to the Kent-Elgin county line, the District's easterly limits. All of Highway 401 in Kent County is now under construction over a distance of 38 miles, including interchanges at Bloomfield Sideroad and Kent Centre, providing access into the city of Chatham. New structures on 401 includes six bridges completed and opened to traffic and seven bridges completed but not opened.

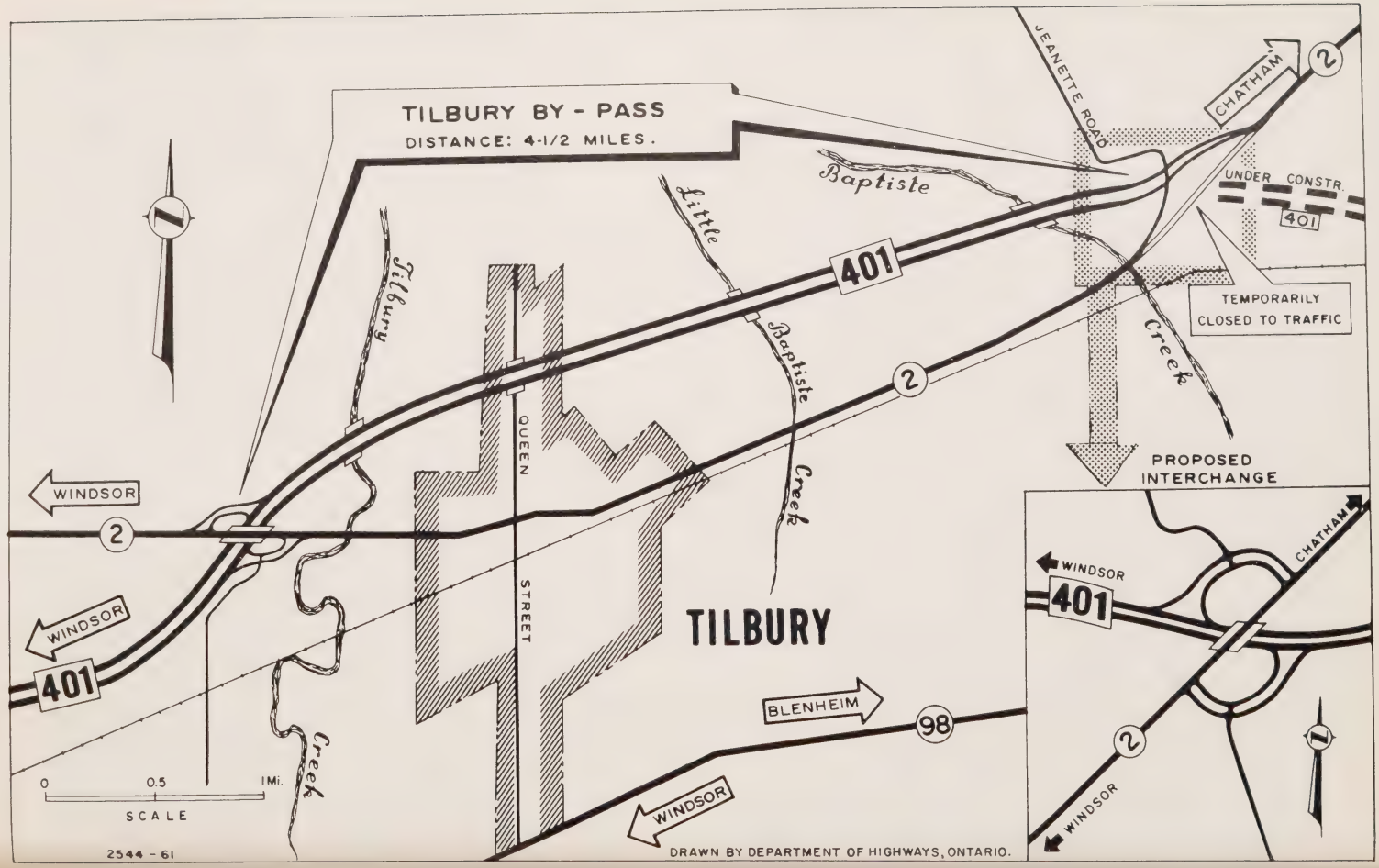
Work was started on the Jackson Park overhead on Ouellette Avenue, assumed as a continuation of Highway 3B from Dougall Avenue, 0.5 mile south of Windsor limits. It provides a direct route to Windsor's main thoroughfare, via a bridge spanning the Canadian Pacific and Essex Terminal Railways. It connects Ouellette Avenue with a new section of this street through Jackson Park being constructed under the bridge contract. Both sections will be dual lanes, concrete base with asphalt top; the median to be paved. Reconstruction and paving of Highway 2 from Thamesville to Louisville, a distance of 9.82 miles, was completed this year, also the Talford Creek bridge on Highway 40 south of Sarnia.

Maintenance

General maintenance operations were carried out in the district during 1961–62. Three hot mix patching contracts were completed. On one of these



Highway 40—Telford Creek Bridge (Chatham District).


TILBURY BY - PASS
DISTANCE: 4-1/2 MILES.
JEANETTE ROAD
CHATHAM
2
UNDER CONSTR.
401
TEMPORARILY CLOSED TO TRAFFIC
Baptiste
Little
Tilbury
401
Baptiste Creek
Creek
PROPOSED INTERCHANGE
WINDSOR
2
QUEEN STREET
TILBURY
WINDSOR
401
CHATHAM
WINDSOR
401
BLENHEIM
98
2
WINDSOR
Creek
0 0.5 1Mi.
SCALE
2544 - 61
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO.

some one-lane patching proved very satisfactory. Five crushed gravel contracts for shouldering were carried out.

One traffic signal was installed near Windsor at the junction of Highway 3B and Cabana Road. The district electrical crew also carried out the rewiring of many of our patrol offices and buildings throughout the district. Temporary street lighting was set up at the east junction of Highways 401 and 2.

A four-bay metal garage and office building was constructed, under the supervision of the Department of Public Works, at our new patrol yard at Wallaceburg.

Catseye roadstuds were installed at two locations: on Highway 79, 2 miles north of Bothwell and on Highway 3, 1.5 miles east of Blenheim. Major repairs were made to eight bridges by the regional bridge crew.

Dix-Seal resurfacing was used for the first time in this district and proved to be satisfactory. Although no serious snow storms were encountered, there was an increase of 1,900 tons of salt over the 1960–61 consumption.

An invitation bid contract for stump removal was called late in the year. Under the supervision of the district arboriculturist, 747 stumps were removed.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
21	C.N.R.	Hwy. 21 at Forest	1 flash. light
21	C.N.R.	Hwy. 21 at Thamesville	2 short-arm gates
79	C.N.R.	Hwy. 79, Lots 15 and 16, Concession 7 and 8, Twp. of Zone	2 short-arm gates

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
2	Thamesville to Kent Bridge	5.79	1961	5.79	19,325
2	Kent bridge to Louisville	4.03	1961	4.03	14,347
7	1.75 mi. east of Jct. Hwys. 7 and 82 to Arkona and Thedford	7.52	1960	0.94	3,045
39	Tecumseh to Puce (diversion)	7.02	1960	7.02	4,054
40	0.6 mi. south of Sarnia	0.19	1961	0.19	835
401	Interchange Jct. Hwys. 401 and 2, 1 mi. west to Tilbury	0.48	1960	0.48	3,044
401	Hwy. 2 east of Tilbury to Hwy. 2 west of Tilbury	4.60	1961	4.60	12,406
	TOTAL	29.63		23.05	57,056

Bituminous Cold Mix

Location	Tons Placed 1961–62
Various patrols	985

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
79	Bothwell to 1.7 mi. north of Alvinston	2.5	2,500
7	East Jct. Hwys. 7 and 21 to Jct. Hwy. 7	2.1	2,099
2	West limits of Chatham to Merlin sideroad	1.6	1,598
	TOTALS	6.2	6,197

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
701	Pelee Island	6	14,805	900
18A	Kingsville to Jct. Hwys. 18 and 18A	19.2	60,223	3,213
	TOTALS	25.2	75,028	4,113

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
39	2.0 mi. east of Tecumseh (diversion)	1960	1961	Reinforced concrete and steel plate girder
40	0.6 mi. south of Sarnia	1960	1961	Reinforced concrete and steel beam
401	2.6 mi. east of Tilbury (Queen Street)	1959	1961	Reinforced concrete, rigid frame
401	1.1 mi. east of Tilbury (Queen Street)	1959	1961	Reinforced concrete, rigid frame
401	Service road 1.1 mi. east of Tilbury (Queen Street)	1959	1961	Reinforced concrete, rigid frame
401	Queen Street overpass, Tilbury	1960	1961	Reinforced concrete, rigid frame
401	0.8 mi. west of Tilbury (Queen Street)	1960	1961	Reinforced concrete, rigid frame
401	Interchange Jct. Hwys. 401 and 2, 1 mi. west of Tilbury	1960	1961	Reinforced concrete and steel plate girder

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1961–62	Tons Placed 1961–62	Pave. Width
39	Jct. Hwys. 39B and 39 (diversion) Tecumseh	0.28	1961	0.28	2,018	30 feet

Concrete Pavement

Hwy. No.	Location	Total Miles	Year Begun	Miles Compl. 1961–62	Sq. Yds. Placed 1961–62	Pave. Width
39	Tecumseh to Puce (diversion)	7.02	1961	7.02	93,211	24 feet
401	Hwy. 2 east of Tilbury to Hwy. 2 west of Tilbury	4.53	1961	4.53	98,185	2/24 feet
	TOTALS	11.55		11.55	191,396	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
2	Kent Bridge to Louisville	4.03	5,647
39	Tecumseh to Puce (diversion)	7.02	44,505
40	0.6 mi. south of Sarnia	0.19	321
401	Hwy. 2 east of Tilbury to Hwy. 2 west of Tilbury	4.53	4,746
	TOTALS	15.77	55,219

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
2	Merlin town line to Tilbury	8.00	4,249
2	Rochester and Tilbury north twp. line to Puce side road	10.00	3,925
3	Blenheim to Morpeth	10.00	3,910
3, 401	Hwy. 3, Maidstone to Cottam, Hwy. 401, 4.0 mi. east to 12.0 mi. east of Windsor	16.00	7,955
40	Sarnia to 3.0 mi. north of Sombra	12.00	5,995
	TOTALS	56.00	26,034

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
2	Thamesville to Kent Bridge	5.79	1960	1.00	4.79
2	Kent bridge to Louisville	4.03	1960	0.50	3.53
39	Tecumseh-Puce (diversion)	7.02	1960	1.00	6.02
40	Talford Creek	0.19	1960	.....	0.19
401	Hwy. 2 east Tilbury, easterly	7.24	1960	3.50	3.74
401	From centre line road easterly to Howard-Harwich town line	4.45	1961	.....	4.25
401	Hwy. 21 westerly to Howard-Harwich town line	4.53	1961	.....	4.23
401	Bloomfield road, westerly	3.93	1961	.....	3.93
401	Bloomfield Road, easterly to west end Kent Centre	3.93	1961	.....	3.00
401	Kent Centre interchange to Centre line road	3.12	1961	.....	2.00
401	Hwy. 21 easterly to County Road 20	4.59	1961	.....	1.50
	TOTALS	48.82		6.00	37.18

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
2	Thamesville to Kent Bridge	5.79	1960	5.79	92,340
2	Kent Bridge to Louisville	4.03	1960	4.03	61,217
39	Tecumseh to Puce (diversion)	7.02	1960	7.02	119,947
40	Talford Creek — Twp. of Moore	0.19	1960	0.19	5,215
401	Hwy. 2 east of Tilbury to Hwy. 2 west of Tilbury	4.60	1961	0.07	260,867
	TOTALS	21.63		17.10	539,586

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
78	Wallaceburg	4-bay patrol garage	1961	1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	10	.....	.....
Off-road parks maintained	10	.....	.....
Roads snowploughed and kept open, King's Highways	16	.....	622
Roadside picnic places maintained	71	.....	.....
Routine maintenance, King's Highways	.....	.....	622
Salt for de-icing roads (raw)	.....	5,753	622
Salt in sand, stockpiled	.....	320	.....
Sand for winter maintenance	.....	2,912	.....
Scale houses maintained	3	.....	.....
Seeding by department's forces (sq. yds.)	1,056,088	.....	.....
Shrubs received and planted this year	3,029	.....	.....
Signs erected or replaced	4,584	.....	.....
Snow fence erected, dismantled, stored	.....	.....	40
Traffic lights installed this year	1	.....	.....
Weed control	.....	.....	421
Zone painting on King's Highways (gals.)	5,922	.....	639

DISTRICT No. 2—LONDON

W. L. FRASER, P.Eng., District Engineer

Construction

During the fiscal year 1961–62, Highway 401 from Highway 8 at Preston to Highway 2 Eastwood, a distance of 25 miles, was completed and opened to traffic upon the completion of four structures this year. The total number of structures is 15. Approximately 1,000 feet of cement-treated subgrade were prepared to act as a test strip for future highway needs.

Grading on Highway 401 from Highway 4 westerly to the Elgin-Kent county line, a distance of 29 miles, was 90 per cent completed. Paving contracts were let for 25 miles of reinforced concrete pavement.

Grading, granular base, and hot mix paving were 95 per cent completed on the New Sarum By-pass at Highways 3 and 74. This by-pass eliminated two hazardous curves.

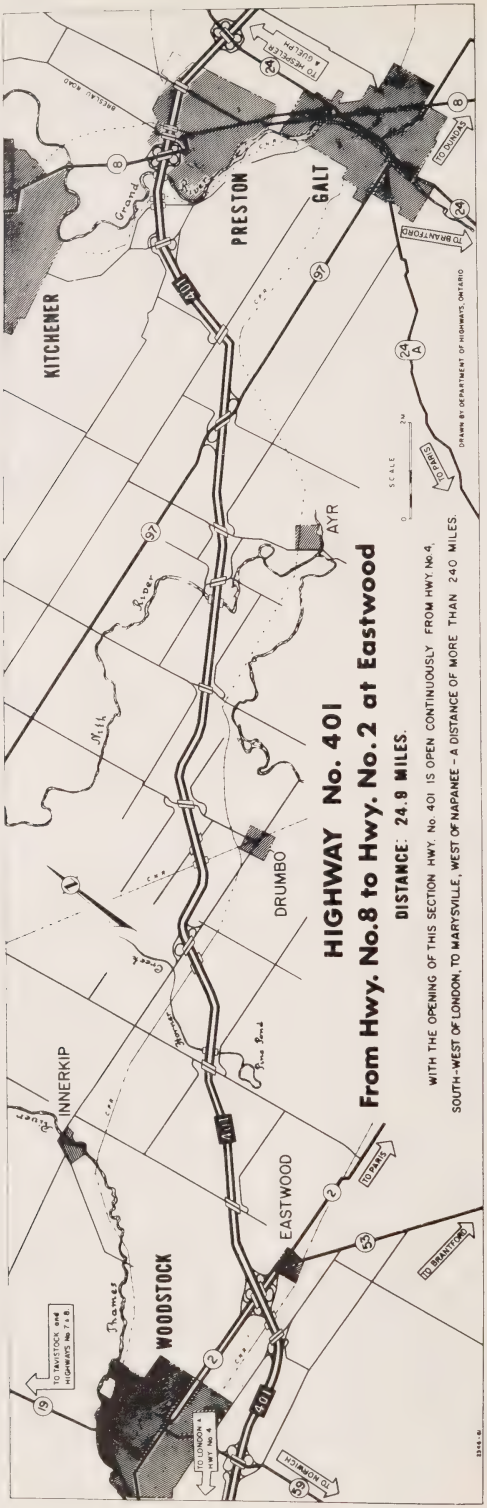
On Highway 4, one new structure was under construction over the north branch of the Thames River at London north, adjacent to an existing structure. The new bridge was built to enable Highway 4 to be widened to four lanes of undivided highway.

Grading, culverts, granular base, and hot mix paving were completed on Highway 7 from 1.5 miles southwest of Parkhill westerly for 5 miles.

On Highway 76, two sections were constructed from Highway 2 southerly for 2 miles; grading and granular base were completed as was one structure over



Highway 401—Grand River Bridge (London District).


HIGHWAY No. 401
From Hwy. No.8 to Hwy. No.2 at Eastwood
DISTANCE: 24.9 MILES.
WITH THE OPENING OF THIS SECTION HWY. No. 401 IS OPEN CONTINUOUSLY FROM HWY No.4,
SOUTH-WEST OF LONDON, TO MARYSVILLE, WEST OF NAPANEE - A DISTANCE OF MORE THAN 240 MILES.
KITCHENER
PRESTON
GALT
AYR
DRUMBO
INNERKIP
WOODSTOCK
EASTWOOD
TO BRANTFORD
TO PARIS
TO NORWICH
TO LONDON
TO TAVISTOCK
TO GUELPH
TO HESPELER
TO BRANTFORD
TO GALT
TO PRESTON
TO KITCHENER
SCALE
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

the Thames River, known as Simpsons Bridge, from 401 interchange northerly for 4.5 miles. Grading, culverts, and granular base were 90 per cent completed. One paving contract will be called in 1962 to pave both sections.

On Highway 80, from Walkers Corners to Alvinston, granular base and hot mix paving were 65 per cent completed.

On Highbury Avenue Extension in the city of London from Hamilton Road southerly to one mile south of Highway 401, one bridge was constructed over the south branch of the Thames River and one over Highway 401. When this highway is completed it will give the city of London its second access to Highway 401.

Maintenance

Four bridges including the Paris high-level bridge were painted during the year. A new deck and ballast walls were placed on the Dingman Creek bridge on Highway 4 and repairs to the deck of the Medway Creek bridge on Highway 4.

Installation of Gabion-type retaining walls were carried out by the bridge repair crew at the Port Stanley lift bridge, the Nith River bridge at Paris, and the Otter Creek bridge at Tillsonburg. In addition, a Gabion-type retaining wall was installed in the Otter Creek on Highway 19, south of Highway 3, to overcome a serious erosion problem.

Two patrol buildings and one service building, all steel, were started with estimated completion dates early in the 1962–63 fiscal year.

Illumination was installed out at the St. Thomas West Entrance, junction of Highways 3 and 4, junction of Highway 2 and Governor's Road, Thamesford, and illumination of interchange lighting at Highway 401 and Highway 2 was begun.

Clearing of Highway 401 from Highway 4 to the Elgin-Kent county line was completed in the spring and fencing of this section was carried out throughout the whole fiscal year. Winter works projects, such as tree-moving and work on parks and picnic sites, continued.

Routine maintenance operations were carried out in 1961–62. There were two additional sections of highway to maintain during the year, Highway 59 from Highway 3 to Long Point Provincial Park which was assumed in July, and Highway 401 from Eastwood to Galt which was opened to traffic in early November.

Winter conditions during January and February were the severest in many years with the usual problems of snow removal and drainage being compounded by several ice storms.

Surface treatment was carried out on a limited scale. Test sections of various asphaltic materials were laid during the summer which, while impressive, have not been down long enough to ascertain their actual value.

Forestry operations during the year consisted of seeding approximately 2,600,000 square yards, and planting 7,634 trees and shrubs, 455 of which were moved by the "Tree Saver" to various parks and interchanges on Highway 401. Field tests were carried out with a new form of mulch consisting of wood cellulose

for use in grass seeding operations, the results of which are not yet conclusive. In addition, field tests for weed control, using various chemicals, were carried out in conjunction with Head Office Forestry Section. Results of soil sterolant tests over the past two years around guide rails and adjacent to tree plantings continued to be extremely favourable.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
3	C.P.R.	Twp. of Yarmouth, Lot 7, Con. 8	4 lights, 1 bell
19	C.N.R.	West of Tillsonburg	2 lights
19	N.Y.C.	Broadway Street, Tillsonburg	2 lights, 2 gates, 1 bell
73	N.Y.C.	2 mi. north of Aylmer	2 lights, 2 gates, 1 bell
74	N.Y.C.	Twp. of Yarmouth	2 lights, 2 gates, 1 bell
80	C.N.R.	Main Street, Glencoe	2 lights, 2 gates, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
3	New Sarum By-pass	1.14	1961	.....	1.14	5,507
7	From 1.5 mi. southwest of Parkhill westerly	4.94	1961	.....	4.94	12,988
24	Brantford north limits to the Jct. of Hwys. 5 and 99	2.13	1960	2.13	2.13	6,425
80	Walkers Corners to Alvinston	4.32	1961	.....	4.32	12,157
401	From Hwy. 8 interchange westerly to Hwy. 97	5.70	1961	.....	5.70	56,864
401	From Hwy. 97 westerly	6.35	1961	.....	6.35	59,383
401	From 6.35 mi. west of Hwy. 97 westerly	6.38	1961	.....	6.38	61,944
401	From Hwy. 2 easterly	6.53	1961	.....	6.53	58,385
401	Blandford Twp. bridge No. 1	0.10	1961	.....	0.10	916
401	Blenheim Twp. bridge No. 8	0.38	1961	.....	0.38	1,171
401	Victoria Road underpass	0.18	1961	.....	0.18	1,305
401	Foldens Road underpass	0.21	1960	0.09	0.12	942
401	Blenheim Twp. bridge No. 1	0.42	1961	.....	0.42	1,101
401	Blandford Twp. bridge No. 5	0.37	1961	.....	0.37	964
	TOTALS	39.15		2.22	39.06	280,052

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
81	Hwy. 22 to Hwy. 7	12.56	40,975	1,289

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
73	Middlesex-Elgin county line to Lyons	3.5	10,918	551.7

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
3	New Sarum By-pass (Nineteen Mile Creek)	1961	1961	Arch culvert
81	Ausable River bridge (Lots 1 and 2 East and West Williams Twp.	1961	1961	Single span
401	Blenheim Twp. underpass (Lot. 1, Con. X and XI)	1961	1961	Rigid frame
401	Blandford Twp. bridge No. 1 (Lot 1., Con. 5)	1961	1961	Rigid frame
401	Blenheim Twp. bridge No. 8 (Lot 19, Con. 6 and 7)	1961	1961	Rigid frame
401	Highbury Avenue underpass (Lot 16, Con. 2, Westminster)	1960	.....	Rigid frame
401	Twp. bridge No. 11 (Lot 10, Con. 3, Southwold Twp.)	1960	.....	Rigid frame
401	Dodds Creek crossing (Lot 24, Con. 3, Southwold Twp.)	1960	.....	Rigid frame
401	Victoria Road underpass (Lot 7, Con. 2, Westminster Twp.)	1961	.....	Rigid frame
401	West Oxford Twp. bridge No. 6 (Lots 12 and 13, Con. 2, West Oxford Twp.)	1961	.....	Rigid frame
401	Blandford Twp. bridge No. 5 (Lots 6 and 7, Con. 2, Blandford Twp.)	1961	.....	Rigid frame
126	Thames River bridge (Highbury Avenue, city of London)	1960	.....	Rigid frame

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
3	New Sarum By-pass	1.14	21,365
7	From 1.5 mi. southwest of Parkhill westerly	4.94	51,486
24	Brantford north limits to Jct. of Hwys. 5 and 99	2.30	8,800
76	From Hwy. 2 southerly for 2 mi.	2.00	7,630
76	From Hwy. 401 interchange northerly 4.5 mi.	4.50	40,360
80	Walkers Corners to Alvinston	4.32	3,653
401	Drumbo county road to Waterloo county road No. 6	11.60	3,560
401	Eastwood, Hwy. 2 interchange to county road 1.8 mi. north of Drumbo	10.61	1,305
401	From Hwy. 8 interchange westerly to Hwy. 97	5.70	200,771
401	From Hwy. 97 westerly	6.35	188,165
401	From 6.35 mi. west of Hwy. 97 westerly	6.38	149,779
401	From Hwy. 2 easterly	6.53	144,910
401	From Hwy. 4 westerly to Lot 5, Con. 2, Southwold Twp.	7.20	3,536
401	From Lot 5, Con. 3, Southwold Twp. to Southwold-Dunwich Twp. Line	4.36	2,495
401	Road allowance between Lots 12 and 13, Dunwich Twp., westerly to east limits of Aldborough Twp.	4.80	3,586
401	From 2 mi. east of Hwy. 76 westerly	5.40	875
401	Blandford Twp. bridge No. 1	0.10	1,783
401	Blenheim Twp. bridge No. 8	0.38	3,722
401	Highbury Avenue underpass	.....	2,737
401	Victoria Road underpass	0.18	4,140
401	Foldens Road underpass	0.21	6,215
401	Blenheim Twp. bridge No. 1	0.42	2,430
401	Blandford Twp. bridge No. 5	0.37	3,452
	TOTALS	89.79	856,755

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
76	3 mi. north of West Lorne to Thames River	3.24	27
80	Walkers Corners to Alvinston	9.87	87
81	Hwy. 22 to Hwy. 7	12.56	305
	Miscellaneous in District No. 2 — Shoulders, etc.	.....	21,386
	TOTALS	25.67	21,805

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
3	New Sarum By-pass	1.14	1961	.....	1.14
7	From 1.5 mi. southwest of Parkhill westerly	4.94	1961	.....	4.94
24	Brantford north limits to the Jct. of Hwys. 5 and 99	2.13	1960	1.40	.73
76	From Hwy. 2 southerly for 2 mi.	2.0	1961	.....	2.0
76	From Hwy. 401 interchange northerly for 4.5 mi.	4.5	1961	.....	4.1
80	Walkers Corners to Alvinston	4.5	1959	4.2	0.3
401	Drumbo county road to Waterloo county road No. 6	11.6	1959	11.3	0.3
401	Eastwood Hwy. 2 interchange to county road 1.8 mi. north of Drumbo	10.61	1959	10.08	.53
401	From 7.2 mi. west of Hwy. 4 westerly to Southwold-Dunwich town line	4.36	1961	.....	4.36
401	From Hwy. 4 westerly 7.20 mi. to Lot 5, Con. 3, Southwold Twp.	7.20	1961	.....	7.20
401	From 0.2 mi. east of Dunwich-Southwold Twp. line westerly to road allowance between Lots 12 and 13, Dunwich Twp.	5.69	1961	.....	5.12
401	From road allowance between Lots 12 and 13, Dunwich Twp. westerly to east limits of Aldborough Twp.	4.8	1961	.....	4.8
401	From 2 mi. east of Hwy. 76 westerly	5.4	1961	.....	4.9
401	From 3.4 mi. west of Hwy. 76 westerly 5.5 mi. to the Elgin-Kent county line	5.5	1961	.....	1.7
	TOTALS	74.37		26.98	38.02

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
3	New Sarum By-pass	1.14	1961	1.08	51,138
7	From 1.5 mi. southwest of Parkhill westerly	4.94	1961	4.94	120,433
24	Brantford north limits to the Jct. Hwys. 5 and 99	2.13	1960	.86	494
76	From Hwy. 2 southerly for 2 mi.	2.00	1961	1.30	34,438
76	From Hwy. 401 interchange northerly	4.50	1961	4.30	132,656
401	Drumbo county road to Waterloo county road No. 6	11.60	1959	.30	560
401	Eastwood Hwy. 2 interchange to county road 1.8 mi. north of Drumbo	10.61	1959	.53	147
401	From Hwy. 8 interchange westerly to Hwy. 97	5.70	1961	5.70	14,282
401	From Hwy. 97 westerly	6.35	1961	6.35	132,248
401	From 6.35 mi. west of Hwy. 97 westerly	6.38	1961	6.38	339,893
401	From Hwy. 2 easterly	6.53	1961	6.53	330,965
401	From Hwy. 4 westerly to Lot 5, Con. 3, Southwold Twp.	7.20	1961	7.20	34,925
401	From Lot 5, Con. 3, Southwold Twp. to Southwold-Dunwich Twp. line	4.36	1961	4.36	27,862
401	From 0.2 mi. east of Dunwich-Southwold Twp. line westerly to road allowance between Lots 12 and 13, Dunwich Twp.	5.69	1961	5.12	10,452
401	Road allowance between Lots 12 and 13, Dunwich Twp. westerly to east limits of Aldborough Twp.	4.80	1961	4.80	15,596
401	From 2 mi. east of Hwy. 76 westerly	5.40	1961	4.90	14,683
401	From 3.4 mi. west of Hwy. 76 westerly 5.5 mi. to the Elgin-Kent county line	5.50	1961	.....	.....

Granular Base on New Grading (Cont'd)

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
401	Blandford Twp. bridge No. 1	0.10	1961	0.10	5,654
401	Blenheim Twp. bridge No. 8	0.38	1961	0.38	8,918
401	Highbury Avenue underpass	.....	1961	.....	5,369
126	Thames River bridge, Highbury Avenue extension	0.14	1961	0.14	12,917
401	Victoria Road underpass	0.18	1961	0.18	19,051
401	Foldens Road underpass	0.21	1961	0.15	17,632
401	Blenheim Twp. bridge No. 1	0.42	1961	0.42	2,060
401	Blandford Twp. bridge No. 5	0.37	1961	0.37	5,545
81	Extension to Ausable River bridge	.....	1961	.....	3,430
	TOTALS	96.63		66.39	1,341,348

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
401	Jct. Hwys. 97 and 401	Patrol garage	1961	N.C.
81	Jct. Hwys. 22 and 81	Patrol garage	1961	N.C.
135	2 mi. east of Jct. Hwys. 2 and 135	Services building	1961	N.C.

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	4	.....	.....
Calcium dust layer on gravel roads	.....	5.25	3.24
Calcium for de-icing roads	.....	5.85	.....
Off-road parks maintained	13	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	655.7
Roadside picnic places maintained	29	.....	.....
Routine maintenance, King's Highways	.....	.....	621.2
Salt for de-icing roads (raw)	.....	21,136	.....
Salt in sand, stockpiled	.....	1,267.5	.....
Sand for winter maintenance	.....	55,992	.....
Scale houses maintained	3	.....	.....
Seeding by department's forces (sq. yds.)	2,600,000	.....	.....
Shrubs received and planted this year	7,634	.....	.....
Signs erected or replaced	8,281	.....	.....
Snow fence erected, dismantled, stored	.....	.....	83.0
Snow hedges planted this year	.....	.....	3.0
Weed control	.....	376	267.0
Zone painting on King's Highways (gals.)	7,381	.....	848.9

DISTRICT No. 3—STRATFORD

L. D. BARRETT, P.Eng., District Engineer

Construction

During the fiscal year ending March 31, 1962, work was completed on four carry-over contracts and two new contracts with two contracts still in progress as mentioned in previous report. Seven new contracts were begun but not completed. Grading, granular base, hot mix paving including structure was completed on Highway 19 from Hickson northerly to Shakespeare. This contract also included extensive work of widening, storm sewers and curb-and-gutter throughout the village of Tavistock. Work was completed on the 630-foot concrete and structural steel Grand River bridge at Freeport on the new Highway 8 diversion. Construction of the Nith River and Wilmot Creek structures along with one mile of grading was completed at Plattsville on Highway 97 replacing three old narrow structures.

A special design structure over the Maitland River in the town of Harriston was completed. It replaces two old structures and greatly improves the intersection of Highway 87 and John Street in the town.

Curves and three narrow structures in the town of Wingham were eliminated by the construction of a diversion with two Bailey bridges connecting Highway 86 with Highway 4.

With the exception of trimming and the top course of asphalt between Palmerston and Teviotdale, grading, granular base and hot mix paving were completed on Highway 23, Listowel to Teviotdale.

Grading, granular base and hot mix paving was completed one mile west of Tralee to Molesworth for 11.4 miles.

Work was started on Highway 21, Grand Bend to St. Joseph, for grading, drainage, granular base and structure. This contract contained a number of



Relocation of Highway 21 at Goderich (Stratford District).

special design structures of a type to prevent the serious erosion which occurs in the area. This contract will be completed during the 1962 construction season.

Grading, drainage and structure for the four-lane Freeport diversion, Highway 8, is now under way. This project will eliminate the old portion of Highway 8 which had a narrow bridge and a series of curves.

Three new structures on Highway 97, west of Galt, were started and will be completed during the 1962 construction season. A major project on Highway 21 at Goderich which includes grading, overhead structure over the C.N.R., a bridge over the Maitland River, and a subway under the C.P.R. was completed except for some paving and trimming. This work eliminates several sharp curves, two old narrow structures and one narrow subway.

Catch basins and sewer work was started in the town of Listowel under a contract for grading, drainage, granular base and hot mix paving, which will be completed during the 1962 construction season.

Construction of culverts began on Highway 4, Clinton to Blyth.

Work of grading, paving and widening was completed on Highway 8 in the city of Stratford under the Connecting Link Agreement.

Maintenance

The past winter was more severe than 1960–61. Additional sand had to be purchased on four patrols.

Two-way radio was installed and operating approximately January 1961 and the following is found to be a versatile addition to the district communication system with a very high potential in time saving:

1. Supervisors find that it speeds completion of work since previous aggravating lack of communication with patrol staffs no longer presents a problem with a two-way radio on the site.
2. Aid to provincial police in reporting accidents and the ability to locate and direct the patrol staff to an accident for traffic control.
3. Both equipment and stores' staff find it a necessary part of their operation. Saves double trips, etc.

A bridge washing unit was built up using two water pumps and a 1,300-gallon tank. This unit operates at high pressure and is capable of loosening and flushing away the winter's accumulation of sand and salt.

Gravel was applied to gravel surfaces before spring break-up and priming of these surfaces was carried out, producing a good driving surface for the summer.

New sites were developed for Galt and Breslau patrols.

Two frame storage buildings were erected for salt storage — Galt and Breslau patrols.

New patrol site developed on New Hamburg By-pass for New Hamburg patrol and two frame and equipment storage buildings erected. New patrol building by Department of Public Works contract at St. Mary's patrol yard.

Major repairs were carried out on three district bridges.

Four narrow unsafe bridges on Highway 86 in the Wingham area were by-passed by Bailey bridge detours. A total of 1,020 feet of Bailey bridge in three structures, 2,180 feet of "H" piling driven, and 160,000 cubic yards of fill and granular material placed. The greater part of this work will remain as permanent by-pass.

Contract bridge painting was carried out on three district bridges, all structures were sand blasted prior to prime coating in an effort to ensure longer-lasting protection.

641 dead and dangerous trees were removed by district forces; 2,642 young trees were planted in parks and roadsides; 401 trees were moved by the "Tree Saver".

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
19	C.N.R.	Mornington Twp., Perth County	Flash. lights, bell
86	C.N.R.	Morris Twp., Huron-Bruce County	Flash. lights, bell
9	C.N.R.	Minto Twp., Wellington-Dufferin County	Flash. lights, bell
23	C.P.R.	Elma Twp., Perth County	Flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
19	Hickson northerly to Hwy. 7	7.83	1960	7.83	31,263
23	Listowel to Teviotdale	13.1	1960	11.15	35,777
86	Approximately 1 mi. west of Tralee to Molesworth	11.38	1961	11.38	33,748
21	Maitland River and vicinity (Goderich)	1.46	1960	0.73	4,740
87	Maitland River at Harriston	0.11	1960	0.11	1,251
97, 101	Stratford-London patrol site	.....	1961	.....	399
86	Wingham By-pass	0.75	1961	0.75	786
	TOTALS	34.64		31.95	107,964

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
24	Jct. Hwy. 51, Orangeville	8.0	23,585	692
86	Hwy. 7, 5 mi. east of Elmira	8.0	36,274	1,148
86	2 mi. west of Elmira to 6 mi. west of Elmira	4.0		
97	Plattsville easterly	7.0	23,455	942
100	Kintore to Hwy. 7	9.0	26,564	968
97	Plattsville southerly	1.36	5,016	233
	TOTALS	37.36	114,894	3,983

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
4	Wingham to Jct. Hwys. 4 and 9	16.50	49,866	2,120.99
8	Mitchell westerly and Dublin westerly	2.0	6,682	259.28
9	Arthur westerly	9.9	33,060	1,540.12
	TOTALS	28.40	89,608	3,920.39

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
8	Grand River bridge, Grand River at Freeport	1959	1961	Structural steel, concrete
97	Nith River bridge, Nith River at Plattsville	1961	1961	Structural steel, concrete
97	Wilmot Creek bridge, Wilmot Creek, 1 mi. south of Plattsville	1961	1961	Reinforced concrete
19	Thames River bridge, Thames River, 1 mi. south of Tavistock	1960	1961	Reinforced concrete
87	Maitland River bridge, Maitland River at Harriston	1960	1961	Reinforced concrete
21	C.P.R. subway, C.P.R. subway on Goderich diversion	1960	1961	Structural concrete
21	Maitland River bridge, Maitland River at Goderich	1960	1961	Structural steel, concrete
21	C.N.R. overhead bridge, C.N.R. overhead at Goderich	1960	1961	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
23	Listowel to Teviotdale	13.1	22,177
23	Listowel to Teviotdale	13.1	4,992
19	Hickson northerly to Hwy. 7	7.83	14,480
19	Hickson northerly to Hwy. 7	7.83	4,996
21	Maitland River and vicinity (Goderich)	1.46	1,355
86	Approximately 1 mi. west of Tralee to Molesworth	11.38	5,001
86	Elmira and vicinity	.....	15,002
100	Kintore and vicinity	.....	4,998
24	Jct. Hwy. 51 to Orangeville	.....	5,039
97	Plattsville and vicinity	.....	4,988
86	Bailey bridge approaches 3 mi. west of Wingham	.....	717
7, 8	New Hamburg patrol site	.....	494
8	Clinton patrol site	.....	489
97, 401	London-Stratford patrol site	.....	990
86, 7	D.H.O. patrol yard site, Guelph	.....	490
86	Wingham By-pass	0.75	450
	TOTALS	55.45	86,658

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
97	4 mi. west of county road 15, Plattsville east limits	7.08	6,224.30
86	Jct. Hwys. 7 and 86, Cox Creek	8.01	4,491.00
86	Waterloo-Wellington line, 5.27 mi. east of Dorking	3.75	3,425.50
97	Plattsville main corner, 2.5 mi. east of Bright	1.39	120.00
19	Kintore, Jct. Hwys. 7 and 100	9.24	7,668.75
136	Jct. Hwys. 24 and 136 Coulterville, Orangeville south limits	7.17	4,737.99
136	Orangeville south limits, Orangeville connecting link	.50	441.75
	Various locations — for pavement patching	.....	1,101.15
	Various locations — shoulders	.....	25,993.91
	TOTALS	37.14	54,204.35

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
8	Grand River at Freeport	0.52	1960	....	0.52
19	Hickson northerly to Hwy. 7	7.83	1960	3.0	4.83
97	Plattsville southerly including Nith River and Wilmot Creek structures	1.36	1960	....	1.36
23	Listowel to Teviotdale	13.1	1960	....	13.1
86	Approximately 1 mi. west of Tralee to Molesworth	11.38	1961	....	11.38
21	Maitland River and vicinity (Goderich)	1.46	1960	....	1.46
87	Maitland River at Harriston	0.11	1960	....	0.11
21	Grand Bend to St. Joseph	7.14	1961	....	5.55
8	Freeport diversion and Grand River railway overhead bridge with new Block Line Road interchange	2.01	1961	....	2.01 partially completed
23, 86	Town of Listowel	1.74	1961	....	.....
97	Washington Creek, approximately 1.80 mi. west of Plattsville	0.37	1961	....	.....
97	Alder Creek structure, approximately 5.50 mi. east of Plattsville	0.36	1961	....	.....
97	Malcom's bridge over Thames River, approximately 3.40 mi. east of Hickson	0.38	1961	....	.....
4	Clinton to Blyth	9.0	1961	....	.....
86	Wingham By-pass	0.75	1961	....	0.75
	TOTALS	57.51		3.0	41.07

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Previous Years	Tons Placed 1961–62
8	Grand River at Freeport	0.52	1960	0.52	23,302
19	Hickson northerly to Hwy. 7	7.83	1960	7.83	433,582
97	Plattsville southerly including Nith River and Wilmot Creek structures	1.36	1960	1.36	48,293
23	Listowel to Teviotdale	13.1	1960	13.1	527,512
86	Approximately 1 mi. west of Tralee to Molesworth	11.38	1961	11.38	117,242
21	Maitland River and vicinity (Goderich)	1.46	1960	1.46	112,799
87	Maitland River at Harriston	0.11	1960	0.11	9,115
86	Wingham By-pass	0.75	1961	0.75	7,150
21	Grand Bend to St. Joseph	7.14	1961	5.55	124,193
	TOTALS	43.65		42.06	1,403,188

Granular Base Where No Grading Done

Hwy. No.	Location	Work Begun	Tons Placed 1961–62
86	Bailey bridge approaches, 3 mi. west of Wingham	1961	17,550
8	Clinton patrol site	1961	4,200
7, 8	New Hamburg patrol site	1961	4,200
97, 401	Stratford-London patrol site	1961	6,800
86, 7	New patrol site	1961	4,250
	TOTALS		37,000

New Buildings

Hwy. No.	Location	Type Building	Year Begun	Completed
97	Jct. Hwys. 97 and 401	Equip. storage	1961	Incompl.
97	Jct. Hwys. 97 and 401	Salt storage	1961	Sept. 1961
86	Jct. Hwys. 7 and 86	Salt storage	1961	Oct. 1961
86	Jct. Hwys. 7 and 86	Equip. storage	1961	Incompl.
19 (Formerly 100)	Jct. Hwys. 7 and 19	Equip. storage	1961	Incompl.
7, 8	New Hamburg By-pass	Salt storage	1961	April 1961
7, 8	New Hamburg By-pass	Equip. storage	1961	April 1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	3		
Calcium dust layer on gravel roads		112.70	37.14
Development roads built			32.00
Off-road parks maintained	12		
Roads snowploughed and kept open, King's Highways	18		622.16
Roadside picnic places maintained	200		
Routine maintenance, King's Highways			622.16
Salt for de-icing roads (raw)		13,598.78	622.16
Salt in sand, stockpiled		2,276.12	
Sand for winter maintenance		76,985.36	
Scale houses maintained	1		
Seeding by department's forces (sq. yds.)	1,118,040		
Signs erected or replaced	2,637		
Snow fence erected, dismantled, stored			170.00
Traffic lights installed this year	2		
Weed control			511.00
Zone painting on King's Highways (gals.)	7,578.00		658.92
Zone painting on Secondary Highways (gals.)	718.25		82.45
Trees planted	2,642		

DISTRICT No. 4—HAMILTON

J. C. THATCHER, P.Eng., District Engineer

Construction

Highway 401 from Highway 8 westerly 1.4 miles including the Grand River bridge was opened to traffic marking the completion of Highway 401 in the Hamilton District.

During the year contracts comprising the substructure of the Homer Skyway were completed and contracts were let for the superstructure. Steel erection is in progress in all sections. In addition, the first contract was let for the east approach to the skyway and included the St. David's interchange and the relocation of Highway 8.



Homer Skyway Construction (Hamilton District).

Work was started on Highway 405, a new four-lane highway, connecting the Queen Elizabeth Way south of Homer and the new international bridge at Queenston. On the neighbouring Queen Elizabeth Way a service road and structure providing access to a new Niagara Parks Commission recreational area was completed at 15 Mile Creek near St. Catharines. Nearby at Grimsby Beach two additional interchange legs were constructed. The elimination of the intersection at Welland Avenue and the Q.E.W. was made possible by the nearly completed Welland Avenue overpass.

Work continued on Highway 403 within the city of Hamilton with the completion of the grading and four structures in the Highway 6 interchange. A contract for twin box culvert and structure at the Main Street interchange was awarded and the work is well advanced. Another contract for 1.5 miles of grading and eight structures between Highway 6 and King Street was awarded.

On the portion of Highway 403 between Highway 6 and the high-speed interchange at Freeman two contracts for grading and structures have been awarded and work is progressing.

On Highway 20 from the Queen Elizabeth Way to King Street a contract for widening and repaving was awarded and work has been carried out through the winter on storm and sanitary sewers.

Reconstruction of six miles of road through the Six Nations Indian Reserve, under a joint project with the Dominion Government, was completed.

Grading and paving of Highway 7 from Highway 10 to Norval was completed.

A new granular base and hot mix pavement was laid on Highway 58 from Welland to Port Colborne. Highway 6 through the village of Hagersville was regraded and paved.

Maintenance

A new metal addition (28 feet x 48 feet) to the existing sign shop was built during the summer which provides better working conditions and houses the new 12-foot scotchlite applicator. This applicator can accommodate the larger signs for freeway signing.

Our zone painting equipment now consists of two dual-type units for more efficient operations.

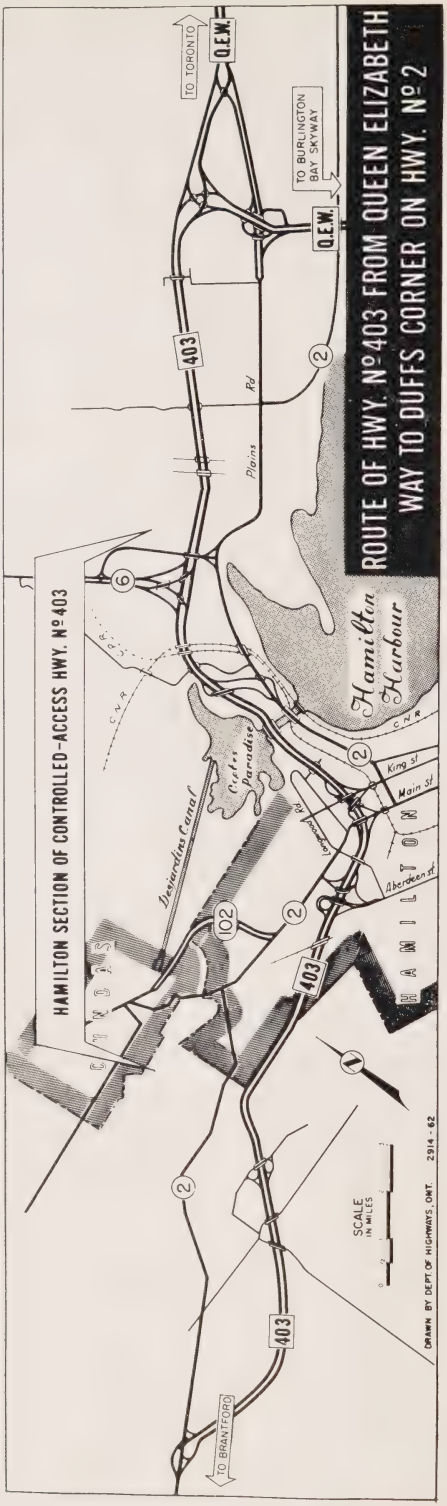
A new three-ton truck was supplied by the equipment branch equipped with a hydraulic operated combination post hole auger and steel post driver used exclusively by the sign erection crew. This equipment speeds sign erection and operates quite satisfactorily.

A new patrol site was purchased on the Q.E.W., 2.5 miles east of the Welland Ship Canal, to service the new Homer Skyway; new eleven-bay garage under construction at the yard.

Seven new traffic signal locations were installed.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
6	C.N.R.	North end of Hagersville	2 poles, 4 lights
25	C.P.R.	Milton	
3A	T.H. & B.	Coyle	2 poles, 4 lights


ROUTE OF HWY. Nº 403 FROM QUEEN ELIZABETH WAY TO DUFFS CORNER ON HWY. Nº 2
HAMILTON SECTION OF CONTROLLED-ACCESS HWY. Nº 403
TO TORONTO
Q.E.W.
TO BURLINGTON BAY SKYWAY
Q.E.W.
403
Plains Rd
Hamilton Harbour
C.N.R.
C.P.R.
Lake Paradise
Desjardins Canal
King St
Main St
Aberdeen St
HAMILTON
102
403
TO BRANTFORD
SCALE IN MILES
DRAWN BY DEPT. OF HIGHWAYS, ONT. 2914 - 62

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Hwy. 8 interchange and Grand River bridge	1.38	1960	1.00	0.38	1,263
7	Hwy. 10 to Georgetown	6.60	1960	.....	6.60	27,383
Q.E.W.	Welland Avenue bridge, St. Catharines	0.50	1961	.....	0.50	5,621
401	From 3.66 mi. east of Hwy. 24 to 2.44 mi. west of Hwy. 24	6.13	1960	6.13	.....	274
58	Port Colborne to Welland	6.02	1961	.....	6.02	27,707
Q.E.W.	Grimsby Beach Road interchange	0.67	1961	.....	0.67	2,692
403	Wolfe Island interchange	1.48	1961	.....	0.80	4,122
Q.E.W.	North service road at Fifteen Mile Creek	0.50	1961	.....	0.50	1,272
403	King-Main interchange	0.23	1961	.....	0.23	221
405	Q.E.W. to just west of Hwy. 8	2.72	1961	.....	.....	630
6	Village of Hagersville	1.15	1960	.....	1.15	6,794
5	Intersection of Hwy. 5 and Brock Road	0.10	1961	.....	0.10	390
8	Part Lots 53 and 54, Con. 1, Ancaster Twp.	0.15	1961	.....	0.15	532
	TOTALS	27.63		7.13	17.10	78,901

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
52	Hwy. 8 to Hwy. 97	2.2	2.2	3,296
97	Hwy. 8 to Hwy. 6	1.8	1.8	2,697
	TOTALS	4.0	4.0	5,993

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
Q.E.W.	Homer Skyway at St. Catharines	0.70	1,240	31.65
Q.E.W.	Homer Skyway at St. Catharines	0.51	505	17.00
52	Hwy. 8 to Hwy. 97	2.20	4,152	165.00
97	Hwy. 8 to Hwy. 6	1.80	3,398	135.00
	TOTALS	5.21	9,295	348.65

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
3, 6, 24, 56	Vicinity of Port Dover and Jarvis	5.2	4,998
3, 3A, 3C, 8, 20, 58	Vicinity of Port Colborne, Welland and Fort Erie	6.6	6,491
5, 6, 7, 25	Vicinity of Guelph and Hamilton	3.7	3,488
	TOTALS	15.5	14,977

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Lot 7, BBFC, Waterloo Twp.	1960	1961	Girder
403	Wolfe Island interchange, Burlington, at Jct. Hwys. 6 and 403.	1961	1961	Reinforced concrete
403	Wolfe Island interchange, Burlington, at Jct. Hwys. 6 and 403.	1961	1961	Reinforced concrete
403	Wolfe Island interchange, Burlington, at Jct. Hwys. 6 and 403.	1961	1961	Reinforced concrete
Q.E.W.	Welland Ave. overpass at St. Catharines, Grantham Twp.	1961	1961	Reinforced concrete
Q.E.W.	North service road at Fifteen Mile Creek, Louth Twp.	1961	1961	Prestressed concrete deck

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Pave. Width
Q.E.W.	Welland Avenue bridge, St. Catharines	0.33	1961	Var.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
401	Hwy. 8 interchange and Grand River bridge	1.38	5,977
7	Hwy. 10 to Georgetown	6.60	17,325
Q.E.W.	Sodom Road to Fort Erie	8.72	27,445
Q.E.W.	Welland Avenue bridge, St. Catharines	0.50	11,529
401	3.66 mi. east of Hwy. 24 to 2.47 mi. west of Hwy. 24	6.13	2,651
58	Port Colborne to Welland	6.02	25,555
Q.E.W.	Grimsby Beach Road interchange	0.67	1,087
Q.E.W.	North service road at Fifteen Mile Creek	0.50	693
52, 97	Various locations	4.00	5,993
5	Intersection with Brock Road	0.20	53
5	Intersection with Brant Street westerly	0.50	184
	TOTALS	35.22	98,492

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
Q.E.W.	Bronte to Fort Erie	71.2	1,529
2	Bronte to Brantford	28.7	1,288
3	Fort Erie to Simcoe	85.5	3,475
3A	Chamber's Corners to Welland	9.3	1,057
3C	Fort Erie to Ridgeway	6.8	250
5	Palermo to Brant county line	27.7	1,145
6	Port Dover to Guelph	59.3	1,495
7	Guelph to Hwy. 10	30.4	450
8	Galt to Niagara Falls	57.8	2,225
8A	St. Davids to Queenston	2.8	100
20	Burlington to Niagara Falls	45.9	1,099
24	Simcoe to Port Dover	9.3	100
25	Queen Elizabeth Way to Hwy. 7	22.2	230
52	Hwy. 2 to Hwy. 97	13.9	.....
53	Hwy. 20 to Hwy. 2	7.2	118
54	Cayuga to Cainsville	26.9	318
56	Elfrida to Hwy. 3	14.8	792
57	Bismark to Beckett's bridge	8.8	200
58	Port Colborne to Hwy. 8	15.7	275
97	Hwy. 6 to Galt	13.7	.....
99	Dundas to Hwy. 24	16.9	32
102	Dundas to Hamilton	4.0	.....
401	Preston to Milton	26.16	245
	TOTALS	604.96	16,423

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
7	Hwy. 10 to Georgetown	6.60	1960		6.60
Q.E.W.	Welland Avenue, St. Catharines	0.50	1961		0.50
Q.E.W.	West substructure including grading and granular base	0.70	1960		0.70
20	Approaches to Burlington Canal lift bridge.	0.50	1960	0.30	
6	Village of Hagersville	1.15	1960		1.15
Q.E.W.	East substructure including grading and granular base	0.51	1961		0.51
3	Town of Dunnville	0.97	1960		0.97
58	Port Colborne to Welland	6.02	1961		6.02
Q.E.W.	Grimsby Beach Road interchange	0.67	1961		0.67
403	Wolfe Island interchange	1.48	1961		1.36
Q.E.W.	North service road at Fifteen Mile Creek	0.50	1961		0.50
20	King Street to C.N.R. subway	1.75	1961		0.10
403	Box culvert at King-Main interchange	0.23	1961		0.08
405	Q.E.W. to just west of Hwy. 8	2.72	1961		0.82
Q.E.W.	From road allowance between Lots 5 and 6, Grantham Twp. to Niagara Twp. line.	1.84	1961		0.37
403	Freeman interchange westerly	3.10	1961		0.06
405	From 1 mi. west of Hwy. 8 to the new Queenston bridge	5.40	1961		1.08
8	Part Lots 53 and 54, Con. 1, Twp. of Ancaster (Dundas)	0.15	1961		0.15
5	Intersection Hwy. 5 and Brock Road	0.20	1961		0.20
	TOTALS	34.99		0.30	21.84

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
401	Hwy. 8 interchange and Grand River bridge	1.38	1960	0.38	445
7	Hwy. 10 to Georgetown	6.60	1960	6.60	234,065
Q.E.W.	Welland Avenue bridge, St. Catharines	0.50	1961	0.50	24,258
401	3.66 mi. east of Hwy. 24 to 2.47 mi. west of Hwy. 24	6.13	1960		1,638
Q.E.W.	West substructure, Homer Skyway, St. Catharines	0.70	1960	0.70	5,754
Q.E.W.	East substructure, Homer Skyway, St. Catharines	0.51	1961	0.51	3,004
Q.E.W.	Centre substructure, Homer Skyway, St. Catharines	0.40	1960	0.40	14,192
20	Approaches to Burlington Canal lift bridge.	0.50	1960		630
6	Village of Hagersville	1.15	1960	1.15	25,179
58	Port Colborne to Welland	6.02	1961	6.02	166,139
Q.E.W.	Grimsby Beach road interchange	0.67	1961	0.67	14,982
403	Wolfe Island interchange	1.48	1961	1.36	55,361
Q.E.W.	North service road at Fifteen Mile Creek	0.50	1961	0.50	17,774
20	King Street to C.N.R. subway (Stoney Creek)	1.75	1961	0.10	942
403	Box culvert at King-Main interchange	0.23	1961	0.08	1,047
405	Q.E.W. to just west of Hwy. 8	2.72	1061	0.27	7,433
Q.E.W.	From road allowance between Lots 5 and 6, Grantham Twp. to Niagara Twp. line	1.84	1961	0.37	1,364
403	Freeman interchange westerly	3.10	1961	0.62	6,000
8	Part Lots 53 and 54, Con. 1, Twp. of Ancaster	0.15	1961	0.15	1,450
5	Intersection Hwy. 5 and Brock road	0.20	1961	0.20	1,148
	TOTALS	36.53		20.58	582,805

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
Q.E.W.	District Yard, Winona	Addition to sign shop	1961	March 1962

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads			10	2.0
Off-road parks maintained		1		
Roads snowploughed and kept open, King's Highways		23		628.67
Roadside picnic places maintained		74		
Routine maintenance, King's Highways				628.67
Salt for de-icing roads (raw)			2,555	
Salt in sand, stockpiled			9,185	
Sand for winter maintenance			75,238	
Scale houses maintained		5		
Seeding by department's forces	(sq. yds.)	2,649,900		
Shrubs received and planted this year		4,637		
Signs erected or replaced		5,424		
Snow fence erected, dismantled, stored				52.0
Traffic lights installed this year		7		
Weed control				10.15
Zone painting on King's Highways	(gals.)	12,974		810

DISTRICT No. 5—OWEN SOUND

H. GREENLAND, P.Eng., District Engineer

Construction

Fiscal year 1961–62 saw the completion of three structures on which construction had begun the previous year. The South Saugeen River bridge at Mt. Forest, Highway 6, was opened to traffic in mid-summer, and the Nottawasaga River bridges at Wasaga Beach, Highway 92, and on Highway 89, 3 miles east of Alliston, in the fall. Retarding agents were used in the deck pours of the two latter bridges in order that the concrete could be placed in a single operation. Another feature of the structure on Highway 89 was the use of structural tremie concrete for the pier footings whereby the entire footings were poured under a considerable head of water.

Grading, drainage, and granular base was completed on Highway 9, from Orangeville west for 9 miles under contract 60-68. Here the contractor completed his work approximately a month ahead of schedule, thus enabling the Department to call paving contract 61-188 in time to place a lift of asphalt pavement on the road before the paving season ended. A pneumatic tired roller was used on this contract on an experimental basis. The results it achieved as a breakdown roller were quite satisfactory, the machine providing over 98 per cent compaction in its first pass.

Under contract 60–284, the old Saugeen River bridge at Southampton was removed in the early part of the year. The removal of the old concrete piers and footings eliminated a hazard to navigation in the harbour.

Work was started in the fall between Orchard and Durham, on Highway 6, under contract 61-10. Approximately one mile of road was nearly completed before construction ceased for the winter.



Nottawasaga River Bridge at Wasaga Beach (Owen Sound District).

Maintenance

Surface treatment was carried out on Highway 4 for 12 miles east of Durham. Good results were obtained using RS2 emulsion and ⅜" washed chips on a primed, surface-treated base.

Sub-excavation and back-fill of poor sections of highway was carried out by patrol crews and resurfaced with hot mix by spreaders.

Several new connecting link agreements were completed with towns and villages and 251 building permits were issued in the district.

A constant effort is being made to maintain and repair older structures. Decks, ballast and abutment wall repairs or replacement and beam reinforcement were involved. Experiments are being conducted in sealing of leaching decks. Twelve structures were painted under contract.

Day labour forces erected 14 miles (approximately) of fencing.

A vacuum heat seal applicator was installed in the district sign shop to improve sign manufacture.

Extra radios in yard sites and three ploughs were installed in strategic locations. Performance was satisfactory and permitted maximum efficiency with available equipment on snow clearance effort. Four snow blowers were continuously at work for over a month during the heavier part of winter. Snowplough equipment crews and mechanics worked overtime to cope with these conditions.

Gas heating was installed in the garage, and two equipment storage buildings.

New patrol garages were built at Durham and Walkerton and a new yard was developed at Hillsdale on Highway 93.

Five salt sheds were built at required locations.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
4	C.N.R.	C.N.R. mlg. 20.71, Brant Twp., Bruce County	2 flash. lights, 1 bell
26	C.N.R.	C.N.R. mlg. 23.4, Nottawasaga Twp., Simcoe County	2 flash. lights, 1 bell
27	C.N.R.	C.N.R. mlg. 74.73 and 74.70, Innisfil Twp., Simcoe County	2 flash. lights, 1 bell at each location

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
4	Saugeen River bridge at Hanover.	0.80	1960	0.60	0.20	1,005.31
6	South Saugeen River bridge at Mt. Forest	0.70	1960	0.20	0.50	1,433.97
9	Orangeville westerly to Hwy. 104.	9.00	1961	.....	9.0	15,497.22
10	Village of Flesherton	.....	1961	.....	.....	518.36
21	Town of Southampton: Hwy. 21 between Claredon and Victoria Streets	.....	1961	.....	.....	289.25
89	Nottawasaga River bridge 5.5 mi. west of Cookstown	0.42	1961	.....	0.42	931.58
	TOTALS	10.92		0.80	10.12	19,675.69

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
6	1 mi. north of Wiarton to 14 mi. north of Wiarton	13.0	40,930	919.1
6	Old Hwy. 6, Handicraft House to Miller Lake	4.1	10,710	282.1
6	Ferndale Corner to 10 mi. north of Ferndale	10.0	31,900	828.1
90	Extension in Barrie (County road 7 and Dunlop Street).	1.0	3,500	81.9
91	Duntroon to Stayner	5.0	16,052	336.7
	TOTALS	33.10	103,092	2,447.9

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Tons Placed 1961–62
10	Melancthon Twp. to Berkley	121.15

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
4	Durham easterly for 12.0 mi.	12	35,902	1,546.18

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
6	South Saugeen River bridge south limits, town of Mt. Forest	1960	1961	Structural steel
89	Nottawasaga River bridge 5.5 mi. west of Cookstown	1960	1961	Structural steel
92	Nottawasaga River bridge at Wasaga Beach	1960	1961	Structural steel

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
6	Ferndale to Miller Lake	10.0	5,984.34
9	Orangeville westerly to Hwy. 104	9.0	126,230.00
24, 26, 91	Vicinity of Collingwood, Stayner and Singhampton	37.0	15,977.89
89	Nottawasaga River bridge 5.5 mi. west of Cookstown	0.42	5,409.35
92	Nottawasaga River bridge at Wasaga Beach	0.16	1,141.55
	TOTALS	56.58	154,743.13

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
4	Flesherton to Walkerton	62.42	862.50
6	Arthur to Tobermory	286.19	10,372.29
9	Jct. Hwys. 9 and 104 to Arthur-Kincardine	62.23	384.00
10	Orangeville to Owen Sound	80.57	1,390.50
12	Jct. Hwys. 12 and 27 to Midland	0.83	6.00
21	Jct. Hwys. 9 and 21 to Jct. Hwys. 6 and 21	59.82	111.00
24	Shelburne to Collingwood	66.41	2,998.50
26	Barrie to Owen Sound	129.92	7,468.50
27	Cookstown to Penetang	119.78	2,323.00
89	Cookstown to Jct. Hwys. 89, 10, 24	75.73	471.00
90	Barrie to Angus	31.81	42.38
91	Stayner to Duntroon	15.27	3,006.00
92	Elmvale to Wasaga Beach	26.01	102.00
93	Craighurst to Jct. Hwys. 93 and 27	10.32	15.00
00	Crownhill to Jct. Hwy. 93	19.80	60.00
	TOTALS	1,047.11	29,612.67

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
6	South Saugeen River bridge, south limits of Mt. Forest	0.7	1960	0.2	0.5
6	Orchard northerly to Durham	5.76	1961	....	1.5
9	Orangeville westerly to Hwy. 104	8.9	1961	....	8.9
89	Nottawasaga River bridge 5.5 mi. west of Cookstown	0.42	1960	....	0.42
	TOTALS	15.78		0.2	11.32

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
6	South Saugeen River bridge south limits of Mt. Forest	0.7	1960	0.2	0.5	4,542.00
6	Orchard northerly to Durham	5.76	1961	....	1.0	50,320.00
9	Orangeville westerly to Hwy. 104.	8.9	1961	....	8.9	143,656.00
89	Nottawasaga River bridge 5.5 mi. west of Cookstown	0.42	1960	....	0.42	10,962.02
92	Nottawasaga River bridge at Wasaga Beach	0.16	1960	....	0.16	8,199.61
	TOTALS	15.94		0.2	10.98	217,679.63

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
93	Near Jct. Hwys. 400 and 93, Flos Twp.	Plough truck storage	1961	Nov. 10, 1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	12	.....	.....
Calcium dust layer on gravel roads	.....	115	29
Development roads built	.....	.....	5.79
Off-road parks maintained	12	.....	.....
Roads snowploughed and kept open, King's Highways	15	.....	534.27
Roadside picnic places maintained	63	.....	.....
Routine maintenance, King's Highways	.....	.....	534.27
Salt for de-icing roads (raw)	.....	10,404	534.27
Salt in sand, stockpiled	.....	3,319	.....
Sand for winter maintenance	.....	90,600	.....
Seeding by department's forces (sq. yds.)	1,437,480	.....	.....
Shrubs received and planted this year	1,032	.....	.....
Signs erected or replaced	2,376	.....	.....
Weed control	.....	.....	411.3
Zone painting on King's Highways (gals.)	6,368	.....	527

DISTRICT No. 6—TORONTO

C. FRASER, P.Eng., District Engineer

Construction

Our major effort during this year continued to be the improvement of Controlled Access Highway 401 by the elimination of more grade intersections and the reconstruction of interchange facilities. A start was made on the widening of the Toronto Bypass section, with the completion of a new high-level bridge across Hogg's Hollow between Avenue Road and Yonge Street.

The reconstruction of Highway 48, a major vacation-land feeder, continued north of Controlled Access Highway 401, and work was started on the reconstruction of Highway 10, between Highways 2 and 5, and on Highway 7 northwest of Toronto.

The construction of new marshalling yards north of Toronto by both Canadian National and Canadian Pacific Railways, and a new Canadian National Railway belt line north of the city, required close co-operation with these companies, and the construction of several major structures for their account.

The elimination of grade intersections on Controlled Access Highway 400 was also continued, with the construction of two more structures.

A very large amount of preliminary work was done, and discussion undertaken with the Planning and Design Branch, regarding the improvement of Controlled Access Highway 401 on the Toronto By-pass.

Maintenance

Both summer and winter maintenance were carried out along normal lines. A less severe winter than average was experienced.

In some locations in the district severe pavement ripples have developed over the past number of years. In an effort to correct this situation extensive burning was done and hot mix pavement was laid under our hot mix patching contracts, which totaled 20,756 tons.

Seal coat resurfacing was applied to 26.9 miles on Highways 9 and 11. 8.8 miles of Dix-Seal surface treatment were applied to Highways 10 and 400. A total of 19,000 gallons of zone paint were sprayed on 777 miles of highways.

Grass cutting and garbage picking again proved an expensive summer operation. The cost of this work was $170.00 and $140.00 per mile respectively.

Protection of workmen engaged on repairs to pavements and shoulders has become a matter of increasing concern, and stringent instructions regarding safety procedures have been put in force. Several very large, new, truck-mounted signs have been employed in an effort to provide better protection for these men.

Field experiments have been carried out by district forces under the supervision of the material testing personnel. These experiments consist of the rehabilitation of deteriorating concrete in bridges and curb and gutter, by the use of epoxy resin. The work has not been in place long enough to show results.



Overpass Construction at Highway 400 and Steeles Ave. (Toronto District).

New efforts have been made to improve the equipment in the district. These include:

1. The purchase of a Topeqka hammerknife mower. This machine was demonstrated in the late summer of 1961 and its purpose is to cut grass on the 2/1 backslopes. It has good travelling ability and one machine is expected to be sufficient for the entire district.

2. We have made arrangements for the trial of a fibre-glass sanding box for our winter sanding units. This box will reduce the gross weight of the vehicle by approximately 1,400 pounds, and it is expected that corrosion will be completely eliminated.

3. Two-way radios are now installed in all snowploughs and have proved invaluable in snowplough direction.

4. A rodding machine, referred to last year, has been purchased and is proving very satisfactory. A machine, built by district forces, from a double drum hoist operated in conjunction with the rodding machine for the cleaning of culverts. It is essentially a drag-line.

Extensive negotiations regarding extensions, construction and maintenance have been carried out with incorporated municipalities where connecting link

agreements already exist. Little of this work can be evaluated as yet because a great deal of it is in the form of an information program. However, five contracts involving 4.7 miles of reconstruction in five municipalities are being called in the next construction season.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
Q.E.W.	Bronte interchange	.53	1959	.45	.08	2,186
Q.E.W.	Credit River bridge	.30	1959	.07	.23	855
401	Whitby easterly 2.15 mi., north and south service road	4.31	1960	.25	4.06	11,632
50	Humber River bridge at Palgrave	.25	1960	....	.25	898
401	Hwy. 401 and Whitby, Pickering town line	.21	1960	....	.21	2,481
401	Hwy. 401 and Moore Road	.20	1960	....	.20	1,677
47	Hwy. 48 to Church Street, Stouffville	1.87	1960	....	1.87	9,520
401	Hwy. 401, Fairport Beach Road to Liverpool Road	1.15	1960	....	1.15	2,992
11	Aurora southerly .89 mi.	.89	1960	.05	.84	5,200
	D.H.O. Downsview, Keele St. west, 1,200 feet	.....	1960	....	.....	20
400	Hwy. 400 and Steeles Avenue	.98	1961	....	.34	4,899
401	Hwy. 401 and Ajax interchange	.31	1961	....	.31	3,020
400	King and Vaughan town line	.51	1961	....	.51	2,890
2	Hwy. 2 and Church Street, Pickering	.82	1961	....	.82	3,859
401	5 mi. west of Hwy. 10, north and south of Hwy. 401	.60	1961	....	.60	3,189
Q.E.W.	Hwy. 27 to Hwy. 10	4.00	1961	....	4.00	64,155
48	2.8 mi. north from Hwy. 401	2.80	1961	....	.62	4,662
10	8 mi. north of Brampton, weigh scales	.25	1961	....	.25	813
10	Q.E.W. to Orangeville	1.03	1961	....	.15	1,982
401	Hogg's Hollow viaduct	1.00	1961	....	.58	6,434
Q.E.W.	Hwy. 10 to Mississauga Road	1.63	1961	....	.33	9,759
7	Hwy. 7 from Jct. Hwys. 400 to Hwy. 27	4.58	1962	....	.05	740
	TOTALS	28.22		.82	17.45	143,863

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed 1961–62
Various	Isolated patching	850

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
Q.E.W.	Hwy. 27 to Hwy. 10	8.0	46,345

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
Various	Throughout district	26.9	72,922	3,986
			Tons of Dix-Seal	
10	North limit of Caledon southerly	4.0	2,250	.....
10	From 2 mi. north of Caledon to Orangeville	4.3	1,991	.....
400	Hwy. 93 interchange	0.5	500	.....
	TOTALS	35.7	77,663	3,986

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Hwy. 401, Yonge Street	1960	1961	Reinforced concrete, structural steel beam
50	Hwy. 50, Palgrave	1960	1961	Reinforced concrete, rigid frame
401	Hwy. 401, Moore Road	1960	1961	Reinforced concrete, rigid frame
48	Hwy. 48, 1.2 mi. north of Hwy. 401	1960	1961	Reinforced concrete, open end abutment
401	Hwy. 401, Ajax	1961	1961	Reinforced concrete, prestress. rigid frame
401	Hwy. 401, Harwood Avenue	1961	1961	Reinforced concrete, structural steel, open end abutment
400	Hwy. 400, King and Vaughan town line	1961	1961	Reinforced concrete, rigid frame
2	Hwy. 2, Duffins Creek, Pickering	1961	1961	Reinforced concrete, rigid frame
2	Hwy. 2, Church Street, Pickering	1961	1961	Reinforced concrete, prestress. rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
Q.E.W.	Hwy. 27 to Hwy. 10	8.0	1961	8.0	17,810

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Sq. Yds. Placed 1961–62
Q.E.W.	Hwy. 27 to Hwy. 10	8.00	1961	8.00	64,200
Q.E.W.	Hwy. 10 to Mississauga Road	3.26	1961	2.25	17,125
	TOTALS	11.26		10.25	81,325

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
Q.E.W.	Bronte interchange	.20	3,391
401	Hwy. 401 and Hwy. 11	.04	3,074
401	Whitby easterly 2.15 mi., north and south service road	4.06	103,719
50	Humber River bridge at Palgrave	.25	9,115
401	Hwy. 401 and Whitby, Pickering town line	.05	476

Crushed Gravel and Stone on Roads by Contract (Cont'd)

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
401	Hwy. 401 and Moore Road	.16	15,091
47	Hwy. 48 to Church Street, Stouffville	1.50	62,576
401	Hwy. 401, Fairport Beach Road to Liverpool Road	.95	22,867
11	Aurora southerly 0.89 mi.	.53	14,910
	D.H.O. Downsview, Keele Street west, 1,200 feet	.....	49
400	Hwy. 400 and Steeles Avenue	.98	131,654
48	1.2 mi. north of Hwy. 401	.09	1,907
401	Hwy. 401 and Ajax interchange	.31	19,898
400	King and Vaughan town line	.51	31,311
2	Hwy. 2 and Church Street, Pickering	.82	46,887
401	5 mi. west of Hwy. 10, north and south of Hwy. 401	.60	17,673
Q.E.W.	Hwy. 27 to Hwy. 10	4.00	181,850
10	8 mi. north of Brampton	.25	6,163
48	2.8 mi. north from Hwy. 401	1.34	88,520
10	Q.E.W. to Cooksville	.98	67,572
401	Hogg's Hollow viaduct	.50	26,881
Q.E.W.	Hwy. 10 to Mississauga Road	.98	106,650
10	Hwy. 10, Q.E.W., south to Port Credit	.10	5,760
7	Hwy. 7, from Jct. Hwy. 400 to Hwy. 27	.16	10,400
	TOTALS	19.36	978,394

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
Various	Throughout district	.....	27,000

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
401	Hwy. 401 and Hwy. 11	.04	1960	.....	.04
401	Whitby easterly 2.15 mi., north and south service road	4.31	1960	.25	4.06
50	Humber River bridge at Palgrave	.25	1960	.....	.25
401	Hwy. 401 and Whitby, Pickering town line.	.21	1960	.16	.05
401	Hwy. 401 and Moore Road	.20	1960	.04	.16
47	Hwy. 48 to Church Street, Stouffville	1.87	1960	.37	1.50
401	Hwy. 401, Fairport Beach Road to Liverpool Road	1.15	1960	.20	.95
11	Aurora southerly 0.89 mi.	.89	1960	.36	.53
	D.H.O. Downsview, Keele Street west, 1,200 feet	.....	1960	.....	.....
400	Hwy. 400 and Steeles Avenue	.98	1961	.....	.98
48	1.2 mi. north of Hwy. 401	.09	1960	.....	.09
401	Hwy. 401 and Ajax interchange	.31	1961	.....	.31
400	King and Vaughan town line	.51	1961	.....	.51
2	Hwy. 2 and Church Street, Pickering	.82	1961	.....	.82
401	5 mi. west of Hwy. 10, north and south of Hwy. 401	.60	1961	.....	.60
Q.E.W.	Hwy. 27 to Hwy. 10	4.00	1961	.....	4.00
48	2.8 mi. north from Hwy. 401	2.80	1961	.....	1.34
10	Q.E.W. to Cooksville	1.03	1961	.....	.98
401	Hogg's Hollow viaduct	1.00	1961	.....	.50
Q.E.W.	Hwy. 10 to Mississauga Road	1.63	1961	.....	.98
10	Hwy. 10, Q.E.W., south to Port Credit	.67	1961	.....	.10
7	Hwy. 7, from Jct. of Hwy. 400 to Hwy. 27	4.58	1962	.....	.16
	TOTALS	27.94		1.38	18.91

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Hwy. 401 and Hwy. 11	.04	1960	.....	.04	3,074
401	Whitby easterly 2.15 mi., north and south service road	4.31	1960	.25	4.06	100,545
50	Humber River bridge at Palgrave	.25	1960	.....	.25	9,115
401	Hwy. 401 and Whitby, Pickering town line	.21	1960	.16	.05	472
401	Hwy. 401 and Moore Road	.20	1960	.04	.16	14,120
47	Hwy. 48 to Church Street, Stouffville	1.87	1960	.37	1.50	56,774
401	Hwy. 401, Fairport Beach Road to Liverpool Road	1.15	1960	.20	.95	21,668
11	Aurora southerly 0.89 mi.	.89	1960	.36	.53	13,424
	D.H.O. Downsview, Keele St. west, 1,200 feet	.....	1960	.....	.....	46
400	Hwy. 400 and Steeles Avenue	.98	1961	.....	.98	131,654
48	1.2 mi. north of Hwy. 401	.09	1960	.....	.09	1,907
401	Hwy. 401 and Ajax interchange	.31	1961	.....	.31	19,607
400	King and Vaughan town line	.51	1961	.....	.51	29,441
2	Hwy. 2 and Church Street, Pickering	.82	1961	.....	.82	44,752
401	5 mi. west of Hwy. 10, north and south of Hwy. 401	.60	1961	.....	.60	16,741
Q.E.W.	Hwy. 27 to Hwy. 10	4.00	1961	.....	4.00	177,290
10	8 mi. north of Brampton	.25	1961	.....	.25	5,943
48	2.8 mi. north from Hwy. 401	2.80	1961	.....	1.34	88,520
10	Q.E.W. to Cooksville	1.03	1961	.....	.98	67,572
401	Hogg's Hollow viaduct	1.00	1961	.....	.50	25,526
Q.E.W.	Hwy. 10 to Mississauga Road	1.63	1961	.....	.98	106,650
10	Hwy. 10, Q.E.W., south to Port Credit	.67	1961	.....	.10	5,760
7	Hwy. 7, from Jct. Hwy. 400 to Hwy. 27	4.58	1962	.....	.16	10,400
	TOTALS	28.19		1.38	19.16	951,001

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	1	.....	.....
Calcium dust layer on gravel roads	.....	460	.....
Roads snowploughed and kept open, King's Highways	.....	.....	777
Roadside picnic places maintained	4	.....	.....
Routine maintenance, King's Highways	.....	.....	777
Salt for de-icing roads (raw)	.....	21,000	.....
Salt in sand, stockpiled	.....	6,600	.....
Sand for winter maintenance	.....	95,000	.....
Scale houses maintained	7	.....	.....
Seeding by department's forces (sq. yds.)	1,000,000	.....	.....
Shrubs received and planted this year	8,300	.....	.....
Signs erected or replaced	9,000	.....	.....
Snow fence erected, dismantled, stored	.....	.....	80
Traffic lights installed this year	19	.....	.....
Weed control	.....	.....	600
Zone painting on King's Highways (gals.)	19,000	.....	.....

DISTRICT No. 7—PORT HOPE

G. F. WETHERALL, P.Eng., District Engineer

Construction

This fiscal year saw the opening of two major highway arteries. The first was the completion of 27 miles of Highway 401. This section commenced at Highway 28 and crossed the townships of Hope, Hamilton, Haldimand, Cramahe and Brighton, its eastern connection being with Highway 30 north of Brighton. The riding surface is asphalt.

The second major event was the opening of an eight-mile section of the Trans-Canada Highway 7, known as the Peterborough By-pass. This section of highway lies just south of the city of Peterborough and crossed the townships of North Monaghan and Otonabee. Included in this section is a 996-foot reinforced concrete structure over the Otonabee River. As this waterway is part of the Trent Canal System navigation lights were installed and an overhead clearance of 29 feet was required.

Also completed this year were 7.3 miles of grading on Highway 45 starting and proceeding southerly from the town of Norwood and crossing Asphodel and Percy townships.

On Highway 7A, in the vicinity of Lake Scugog, grading and paving was virtually completed with only the top riding surface of asphalt to be placed in the future. This stretch covered 9.2 miles starting at the west limits of the town of Port Perry and ending just east of the Caesarea side road. Work was in Reach and Cartwright townships. Also on Highway 7A work of grading and granular base began on 4 miles of highway widening. The work starts at Highway 35 and runs westerly through Manvers township.

On Highway 12 grading and paving was completed on 6.3 miles between Greenbank and Blackwater villages. One new structure was completed on this section over the Beaverton River. Also completed and opened this year on Highway 12 was the Gamebridge By-pass.

Grading was completed on 7.5 miles of Highway 14 in the county of Prince Edward. This stretch runs northerly from Bloomfield crossing Hallowell and Sophiasburg townships.

Further work is now in progress on Highway 401 between Oshawa and Bowmanville. Work in progress includes service roads, structures and interchange. This will eliminate ten level crossings.

Maintenance

Upon the completion of the major contracts on Highway 401 from Port Hope to Brighton and Highway 7, Peterborough By-pass, maintenance forces followed with an extensive program of seeding and straw mulching on the right-of-way. Also the planting of trees and shrubs, with very good results.



Otonabee River Bridge—Peterborough By-pass (Port Hope District).

In addition to normal maintenance, a surface treatment contract of 32 miles and prime on gravel roads of 71.5 miles were carried out.

Speed zone changes on various highways account for part of the 3,694 signs erected or changed on construction and maintenance.

On three recommended sharp curves "Catseye Roadstuds" were installed, with favourable reports in the reduction of accidents.

The illumination of the junction of Highways 115-28 and Mill Street and Highway 401 at Newcastle, along with two overhead signs on Highway 401, was completed.

Illumination of four intersections on Highway 7, Peterborough By-pass, started late in the fall, will be completed early in the spring.

Installation of thirty-three (33) two-way radios in patrol trucks, snowploughs, service trucks and supervisor's vehicles, also five base stations, throughout the district, was completed in December. This has resulted in better communication with the patrol staff. Also as a public service for reporting accidents to the Ontario Provincial Police and arranging for garage and medical services, when required.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
7B	C.N.R.	Lansdowne Street, Peterborough	2 flash. lights, 1 bell
28	C.P.R.	Kendry (near Peterborough)	2 flash. lights, 1 bell
7	C.P.R.	Ontario Rock Company Spur Line, 3.4 mi. east of Havelock	2 flash. lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Interchange at Hwy. 45	2.00	1960	1.90	0.10	5,597
401	Hwy. 28 to Hwy. 45	5.44	1960	2.44	3.00	30,769
401	Hwy. 45 to Grafton interchange	7.70	1960	3.00	4.70	42,345
401	Grafton interchange to line between Lots 29 and 30, Cramahe Twp.	6.85	1960	3.00	3.85	36,841
401	Line between Lots 29 and 30, Cramahe Twp. to Hwy. 30	6.90	1960	0.40	6.50	63,245
401	Service road, Twp. of Darlington, Lot lines 13 and 14 to Lot 31	4.61	1961	.....	0.21	678
12 T.C.	Gamebridge By-pass	1.36	1961	.....	1.36	6,983
7, 12	Greenbank to Blackwater	6.26	1961	.....	6.10	23,355
7 T.C.	Peterborough By-pass	6.79	1961	.....	6.79	40,162
7A	Caesarea side road to Port Perry and Port Perry village (Queen and Water Streets)	9.91	1961	.....	3.91	18,021
	TOTALS	57.82		10.74	36.52	267,996

Bituminous Mulch and Cold Mix

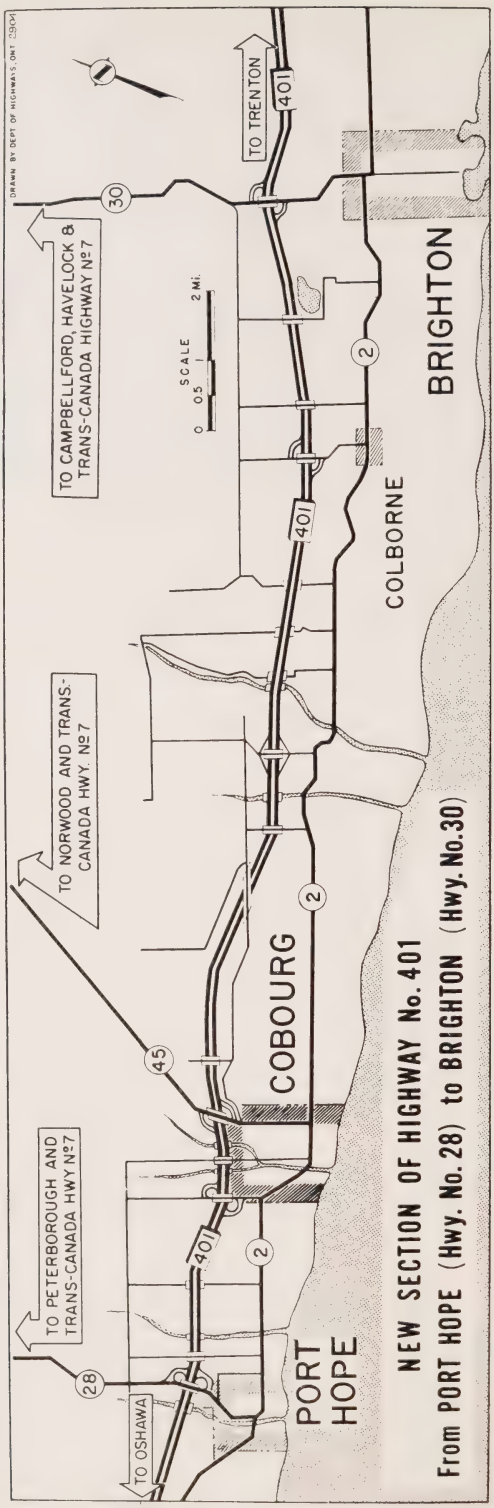
Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
503	Uphill, west 4.0 mi.	4.0	4.0	6,600

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1960–61	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
7A	Hwy. 35	8.4	20,729	733
36	Buckhorn Road, various sections	9.0	22,204	785
46	Jct. Secondary Road 505, various sections	5.0	12,373	437
503	2 mi. west of Norland to 4 mi. west of Uphill	14.5	35,641	1,266
503	Sebright to 6 mi. north of Kirkfield	11.1	26,983	968
505	Victoria Road to Uphill	12.0	29,496	1,045
507	Hwy. 36, 12.5 mi. north, various sections	10.5	25,869	916
36	Burnt River	1.0	2,458	87
	TOTALS	71.5	175,753	6,237

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
7A	From Jct. Hwys. 115, 7A to Bethany	6.6	18,512	823.68
46	From Jct. Hwys 35, 46 to Jct. Secondary Road 505, Hwy. 46	11.2	31,412	1,397.89
121	From south Jct. Secondary Road 500 to Hwy. 121 southerly	14.2	39,825	1,772.29
	TOTALS	32.0	89,749	3,993.86


DRAWN BY DEPT OF HIGHWAYS, ONT. 1950
TO CAMPBELLFORD, HAVELOCK & TRANS-CANADA HIGHWAY No 7
TO TRENTON
401
30
SCALE
0 0.5 1 2 Mi.
TO NORWOOD AND TRANS-CANADA HWY. No 7
TO PETERBOROUGH AND TRANS-CANADA HWY No 7
TO OSHAWA
28
45
401
2
COBOURG
401
2
COLBORNE
2
BRIGHTON
PORT HOPE
NEW SECTION OF HIGHWAY No. 401
From PORT HOPE (Hwy. No. 28) to BRIGHTON (Hwy. No. 30)

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Hamilton Twp.	1960	Open	Concrete beam box girder
401	Darlington Twp.	1961	No	Concrete, rigid frame slab
401	Darlington Twp.	1961	No	Concrete, prestressed girders
401	Darlington Twp.	1961	No	Concrete, prestressed girder
12 T.C.	Thorah Twp.	1960	Open	Reinforced concrete, structural steel
7, 12	Brock Twp. (widening only)	1961	Open	Concrete beam and slab

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
401	Interchange at Hwy. 45	0.10	8,028
401	Hwy. 28 to Hwy. 45	0.44	26,872
401	Hwy. 45 to Grafton interchange	1.70	52,768
401	Grafton interchange to Lot line 29 and 30, Cramahe Twp.	1.85	56,173
401	Lot lines 29 and 30, Cramahe Twp. to Hwy. 30	3.00	105,874
401	Service road, Lot lines 13 and 14 to Lot 31, Darlington Twp.	2.00	9,691
45	Norwood southerly 7.30 mi.	7.30	78,582
14	Bloomfield to Crofton	7.50	79,562
12 T.C.	Gamebridge By-pass	1.36	21,212
7, 12	Greenbank to Blackwater	6.26	74,984
7A	Port Perry easterly 7.50 mi.	3.20	57,261
7 T.C.	Peterborough By-pass	6.79	113,124
7A	Caesarea side road to Port Perry and Port Perry village (Queen and Water Streets)	9.91	36,789
	TOTALS	51.41	720,920

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
7A	Jct. Hwys. 7A and 35 to Caesarea turn	9.5	200
46	Jct. Hwy . 35 to Jct. Secondary Road 505	10.10	135
503	Jct. Hwy. 35 to Jct. Hwy. 46	27.76	2,115
505	Jct. Hwy. 36 to Victoria-Haliburton boundary	21.60	300
	TOTALS	68.96	2,750

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
401	Interchange at Hwy. 45	2.00	1960	1.50	0.50
401	Service road, Darlington Twp., Lot lines 13 and 14 to Lot 31	4.61	1961	.....	3.61
45	Norwood southerly 7.30 mi.	7.30	1961	.....	7.30
14	Bloomfield to Crofton	7.50	1961	.....	7.50
12 T.C.	Gamebridge By-pass	1.36	1961	.....	1.36
7, 12	Greenbank to Blackwater	6.26	1961	.....	6.26
7A	Port Perry easterly 7.50 mi.	7.50	1960	4.30	3.20
7A	Caesarea side road to Port Perry and Port Perry village (Queen and Water Streets).	9.91	1961	.....	9.91
7A	From Hwy. 35 westerly 4.38 mi.	4.38	1962	.....	0.38
	TOTALS	50.82		5.80	40.02

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Interchange at Hwy. 45	2.00	1960	1.90	0.10	20,412
401	Hwy. 28 to Hwy. 45	5.44	1960	5.44	.....	9,096
401	Hwy. 45 to Grafton interchange	7.70	1960	6.00	1.70	24,330
401	Grafton interchange to Lot line 29 and 30, Cramahe Twp.	6.85	1960	5.00	1.85	28,478
401	Lot line 29 and 30, Cramahe Twp. to Hwy. 30	6.90	1960	3.90	3.00	81,172
401	Service road, Lot lines 13 and 14 to Lot 31, Darlington Twp.	4.61	1961	.....	2.00	31,078
45	Norwood southerly 7.30 mi.	7.30	1961	.....	7.30	344,651
14	Bloomfield to Crofton	7.50	1961	.....	7.50	289,395
12 T.C.	Gamebridge By-pass	1.36	1961	.....	1.36	62,159
7, 12	Greenbank to Blackwater	6.26	1961	.....	6.26	174,930
7A	Port Perry easterly 7.50 mi.	7.50	1960	4.30	3.20	156,655
7 T.C.	Peterborough By-pass	6.79	1961	.....	6.79	392,409
7A	Caesarea side road to Port Perry village (Queen and Water Streets)	9.91	1961	.....	9.91	37,895
	TOTALS	80.12		26.54	50.97	1,652,660

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
401	Jct. Hwy. 401-Grafton Road	Salt shed	1960	1961
401	Jct. Hwy. 401-Grafton Road	Salt shed	1960	1961
28	1.3 mi. north of Youngs Point	Salt shed	1961	1961
401	Jct. Hwy. 401-Grafton Road	Patrol garage	1960	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	6	140	.....
Calcium dust layer on gravel roads	.....	24	32
Off-road parks maintained	9	.....	.....
Roads snowploughed and kept open, King's Highways	21	.....	728.82
Roads snowploughed and kept open, Secondary Highways	4	.....	84.89
Roadside picnic places maintained	112	.....	.....
Routine maintenance, King's Highways	.....	.....	728.82
Routine maintenance, Secondary Highways	4	.....	84.89
Salt for de-icing roads (raw)	.....	11,777.6	.....
Salt in sand, stockpiled	.....	3,780	.....
Sand for winter maintenance	.....	99,262	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (sq. yds.)	2,102,980	.....	.....
Shrubs received and planted this year	6,130	.....	.....
Signs erected or replaced	3,694	.....	.....
Snow fence erected, dismantled, stored	.....	.....	86.70
Weed control	.....	.....	307.38
Zone painting on King's Highways (gals.)	7,754	.....	721.33
Zone painting on Secondary Highways (gals.)	284	.....	21.43

DISTRICT No. 8—KINGSTON

E. A. CASH, P.Eng., District Engineer

Construction

Grading on Highway 401 was in progress from Wyman's Road easterly to Odessa and from Prescott to Highway 16. Paving on the south lane was completed from Highway 38 to Odessa and paving contracts were awarded from Odessa to Napanee and Prescott to Highway 16. Thirteen structures at intersecting roads and water crossings were completed on Highway 401 and five other structures were started.

On other highways, the Gananoque River bridge was completed on Highway 32, in conjunction with 1.2 miles of grading, granular base and paving. On Highway 15, paving was completed from Morton to Elgin, grading was completed from Morton to Seeleys Bay, and a paving contract awarded from Morton to Seeleys Bay. On Highway 7T.C.H. grading was completed from Sharbot Creek westerly 9.9 miles, and a paving contract was started. Grading was started on Highway 7 from Kaladar easterly 8.6 miles.

Maintenance

One section of Highway 401 (single-lane) was opened between the junction of Highways 38 and 401 and Mud Lake Road at Odessa. A new patrol was set up on this section of highway and a portion of an older patrol included to provide an economic working area. A five-ton truck with one-way plough wing and V-nosed plough was supplied to the district for maintenance on this section of Highway 401, together with one power sander unit which was mounted on a rented truck.



Highway 2—new entrance to Fort Henry (Kingston District).

District commenced construction of two patrol buildings, one of four bays and one of five bays, by day labour, at Madoc and Stirling respectively, and it is expected that these buildings will be ready for occupancy in the early part of the 1962–63 fiscal year. A six-bay patrol building was constructed by contract at Crystal Beach, west of Brockville, to service two patrols in the area.

A new patrol yard between Kingston and Napanee, south of Highway 401, was graded, two salt sheds constructed by day labour, and a sand pile base paved and drained to allow service to the new section of 401 as noted above.

In addition to this, two other sand pile bases in the district in patrol yards were paved and suitable off-take drainage arranged to decrease the possibility of salt contamination of the department's wells.

A test air bubbling system for ice control was installed at the Adolphustown landing of the Adolphustown-Glenora ferries on Highway 33 in the Bay of Quinte, and was operated through the colder part of the winter with good success, preventing the formation of mass drift ice in the approaches to the ferry slips and within the slips themselves.

Construction was started on new toilet facilities on either side of the approaches to the ferry landing and it is expected that the buildings will be ready by the early part of the 1962 summer season.

Day labour grading was carried out on Highway 2 between Marysville and the entrance road to Highway 401 west of Marysville to improve the shoulders and ditch characteristics of the area. This work was done in a manner which did not require removal of trees and old fence lines along the highway.

Investigation into the use of soil sterilant in guard rail areas was continued with two new materials supplied in the test sections across the district and further records are being kept of this work.

The district's mobile, two-way radio system was enlarged by the addition of five-bay stations in main patrol yards along the line of Highways 2 and 401, and also by the installation for winter service of units in five of the large snowploughs to provide increased coverage of the Highway 2-401 sector. In addition to this the district operated a courtesy patrol, using three-ton patrol trucks, on Highway 401 throughout the winter months to provide assistance to motorists stalled or otherwise in difficulty on the highway, particularly during the after-dark hours.

Bituminous Hot Mix Pavement

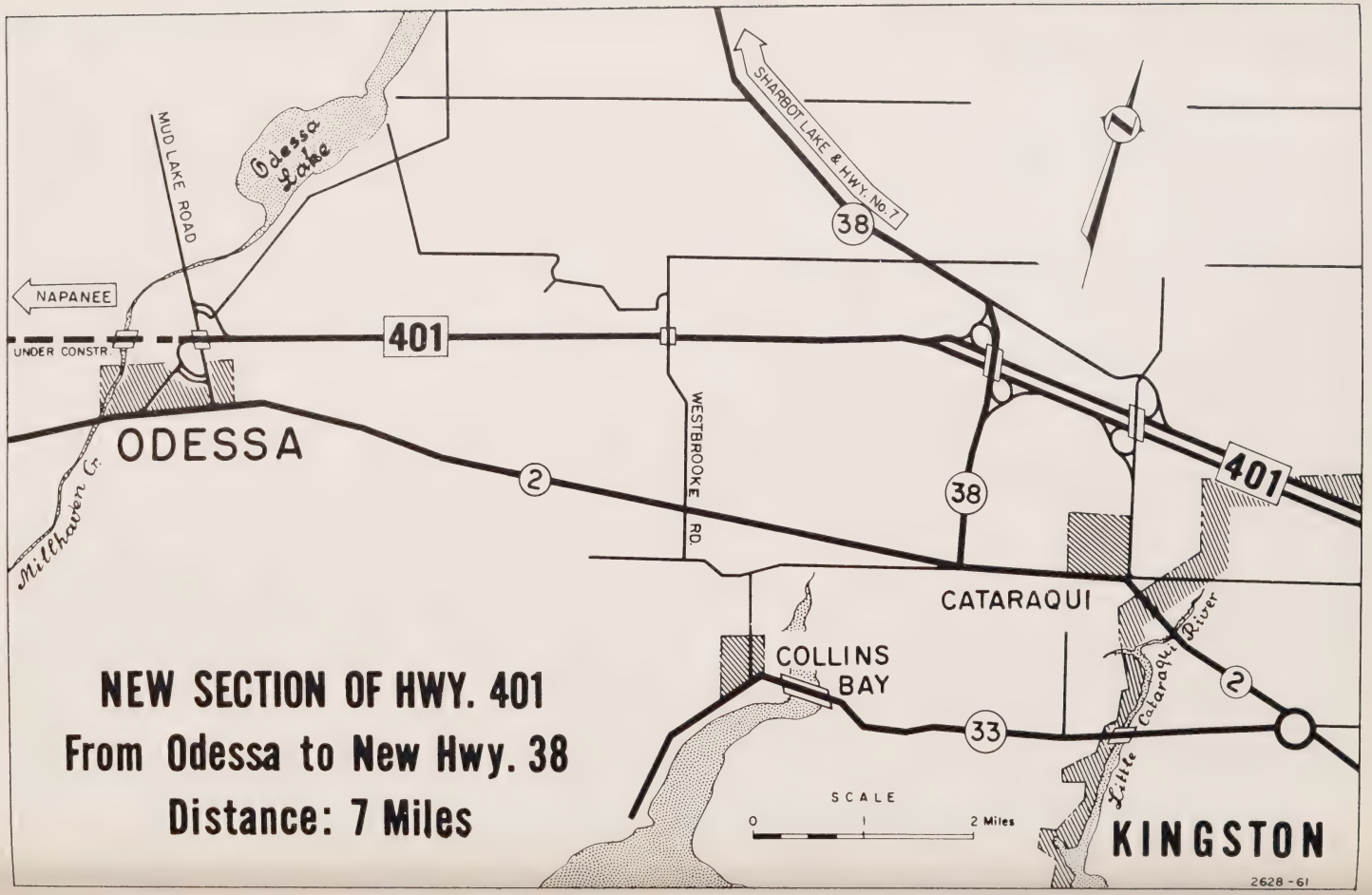
Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Shannonville Road interchange.	0.32	1960	.....	0.32	2,076
401	C.P.R. overhead bridge, Prescott	0.57	1960	.....	0.57	1,148
401	C.N.R. subway to Lots 15 and 16, Richmond Twp.	2.26	1960	.....	1.13	695
401	Structure and approaches, Newburgh Road	0.46	1961	.....	0.46	1,284
401	Hwy. 401 and new Hwy. 38 interchange	1.05	1961	.....	1.05	9,973

Bituminous Hot Mix Pavement (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Camden Road interchange to Millhaven Creek	5.60	1961	.....	1.04	1,393
401	Hwy. 38 to Wilton Rd., Odessa.	6.92	1960	.....	0.49	5,184
401	Interchange at county road to Wallbridge	0.57	1961	.....	.....	600
401	Mud Lake Road at Odessa	0.39	1961	.....	0.39	191
2	Entrance to Fort Henry	0.59	1960	.....	0.59	2,325
7 T.C.	Sharbot Creek westerly	9.84	1961	.....	9.84	13,255
15	South of Seeleys Bay to south of Morton	7.74	1961	.....	7.74	9,614
15	Morton to Elgin	5.86	1961	5.86	5.86	7,804
32	Gananoque River bridge	1.20	1961	.....	1.20	3,514
33	Collins Creek to Kingston	3.67	1961	.....	3.67	13,438
	TOTALS	47.04		5.86	34.35	72,494

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
2	Jct. Hwy. 16 to Crystal Beach interchange	17.18	17.18	10
401	Crystal Beach interchange to Thousand Island Bridge Road	15.50	15.50	8
2	Crystal Beach interchange to interchange 401, Gananoque	23.70	23.70	29
708	Hwy. 401 to international boundary	1.35	1.35	20
2	Gananoque west limits to Kingston east limits	16.08	16.08	10
15	Jct. Hwy. 2 to Frontenac county line	19.80	19.80	5
15	Frontenac-Leeds county line to Crosby	16.06	16.06	30
32	Gananoque to Jct. Hwy.15	10.03	10.03	16
42	Jct. Hwy. 15 (Crosby) Westport, south limits	8.61	8.61	10
2	Kingston west limits to Bridge Street, Napanee	20.73	20.73	45
Old 38	Cataraqui to Kingston Portland line	8.94	8.94	8
2	Dundas Street, Napanee to Trenton east limits	34.30	34.30	85
41	Napanee, Centre Street to Jct. Hwy. 7	31.68	31.68	124
38	Kingston, Portland Twp. line to Jct. Hwy. 7	35.12	35.12	60
15	Jct. Hwy. 42 to Smiths Falls south limits	19.63	19.63	5
42	Delta west limits to Jct. Hwy. 15	8.10	8.10	5
29	Brockville north limits to Smiths Falls south limits	28.98	28.98	50
42	Jct. Hwy. 29 to Delta west limits	15.97	15.97	44
7 T.C.	Jct. Hwy. 41 to Jct. Hwy. 14	32.25	32.25	18
7 T.C.	Jct. Hwy. 43 to Jct. Hwy. 509	23.08	23.08	35
43	Smiths Falls north west limits to Jct. Hwy. 7	11.48	11.48	40
7 T.C.	Jct. Hwy. 509 to Jct. Hwy. 41	24.95	24.95	300
33	Kingston west limits to Glenora ferry dock	30.08	30.08	120
95	Hornes Point to Jct. Hwy. 96	7.19	7.19	56
96	Quebec Head to west end Con. 2	19.90	19.90	100
37	Jct. Hwy. 401 to Jct. Hwy. 7	27.52	27.52	67
14	Jct. Hwy. 401 to Marmora	26.63	26.63	54
33	Trenton to Stirling	14.88	14.88	35
401	Camden east road to Hwy. 15	18.33	18.33	9
401	Thousand Island Bridge Road to Hwy. 15	25.00	25.00	5
401	Jct. Hwy. 16 to Crystal Beach interchange	22.10	.....	10
Secondary Highway				
502	Bridge Street, Napanee to Hwy. 2, Marysville	8.54	8.54	26
509	Jct. Hwy. 7 to Snow Road	12.06	12.06	90
	TOTALS	635.75	613.65	1,529


SHARBOT LAKE & HWY. No. 7
38
1
MUD LAKE ROAD
Odessa Lake
NAPANEE
UNDER CONSTR.
401
ODESSA
Millhaven Cr.
2
WESTBROOKE RD.
38
401
CATARAQUI
COLLINS BAY
Cataraqui River
2
33
Little Cataraqui
SCALE
0 1 2 Miles
KINGSTON
NEW SECTION OF HWY. 401
From Odessa to New Hwy. 38
Distance: 7 Miles
2628-61

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
401	From Hwy. 38 east to Jct. Hwy. 2, Gananoque	24.0	1,299
401	Gananoque River bridge		55
2	Various on Hwy. 2	.....	723
401, 2, 15	Eastern Section	53.0	3,699
2-7-14-33 -37-502	Western Section	97.0	42,43
7-38-33	Central Section	66.0	5,059
33	Millhaven to Collins Creek	5.68	13,786
	TOTALS	245.68	28,864
Secondary Road			
502	Intersection, Bridge Street and Hwy. 502	.....	2.63

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
95, 96	Wolfe Island	28.0	69,931	3,054
7 T.C.	1 mi. east county line, Lennox and Addington to Hastings County	31.25	3,136	185
Secondary Road				
509	Hwy. 7 to Clarendon	6.5	17,343	752
	TOTALS	65.40	90,410	3,991

Bridges Built

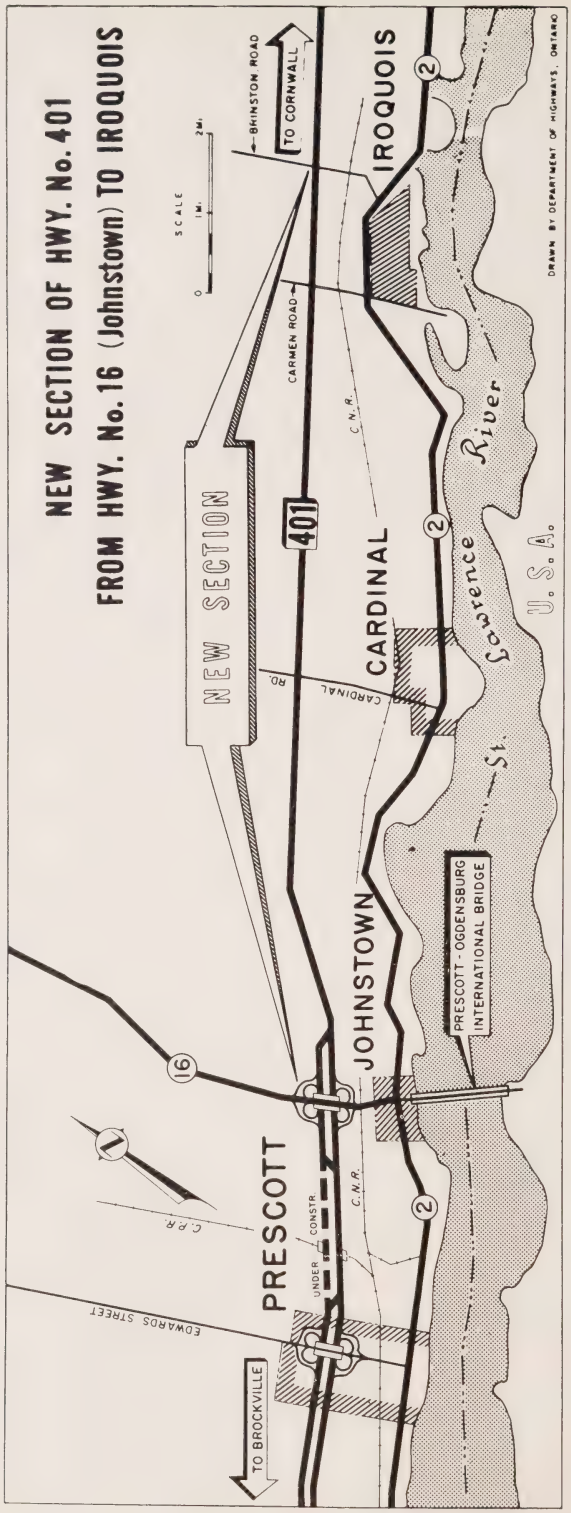
Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	C.N.R. subway at Napanee	1960	1961	Structural steel girder
401	C.P.R. overhead, west of Hwy. 16	1960	1961	Rigid frame
401	Interchange Hwys. 401 and 38	1961	1961	Concrete box girder
401	Hwy. 401, Wilton Creek (Twins)	1961	.....	Rigid frame
401	South service road, Hwy. 401, Wilton Creek	1961	.....	Rigid frame
401	Ernestown Twp., Camden Road	1961	1961	Concrete box girder
401	Ernestown Twp., Wilton Road	1961	.....	Concrete box girder
401	Kingston Twp., Westbrooke Road	1961	1961	Concrete box girder
401	Ernestown Twp., Mud Lake Road	1961	1961	Concrete box girder
401	Ernestown Twp., Brandons Creek (Twins)	1961	.....	Rigid frame
401	Tyendinaga Twp., Marysville side road.	1961	.....	Concrete box girder
401	Marysville Creek culvert, on County Road 15	1961	.....	Barrel arch
32	Gananoque River bridge north of Gananoque	1960	1961	Structural steel girder
401	County Road 15, Marysville Creek	1961	.....	Rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
401	From new Hwy. 38 to Wilton Road, Odessa.	6.92	1960	0.19	323

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Sq. Yds. Placed 1961–62
401	From new Hwy. 38 to Wilton Road, Odessa.	6.92	1960	6.92	96,550


NEW SECTION OF HWY. No. 401
FROM HWY. No. 16 (Johnstown) TO IROQUOIS
SCALE
0
1 MI.
2 MI.
BRINSTON ROAD
TO CORNWALL
CARMEN ROAD
C.N.R.
401
NEW SECTION
IROQUOIS
CARDINAL RD.
CARDINAL
St. Lawrence River
U.S.A.
PRESCOTT - OGDENSBURG INTERNATIONAL BRIDGE
JOHNSTOWN
16
2
1
C.P.R.
PRESCOTT
UNDER CONSTR.
C.N.R.
EDWARDS STREET
TO BROCKVILLE
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
401	Shannonville Road interchange	0.32	697
401	C.P.R. overhead bridge, Prescott	0.57	45
401	Bridge and approaches at Newburgh Road	0.46	572
401	Hwy. 38 and Hwy. 401 interchange	1.05	17,080
401	Camden Road interchange to Odessa	5.60	1,109
401	Hwy. 38 to Odessa	6.92	19,335
401	Napanee River easterly	4.90	72
2	Entrance to Fort Henry	0.59	647
15	Morton to Elgin	5.86	5,864
15	South of Seeleys Bay to south of Morton	7.74	8,885
32	Gananoque River bridge north of Gananoque	1.20	1,343
33	Millhaven to Collins Creek	5.68	21,947
33	Collins Creek to Kingston	3.67	4,217
41	Erinsville patrol yard (stock pile)	.....	5,000
7	Sharbot Creek westerly	9.90	9,998
7	Patrol yard, Jct. Hwys. 7 and 509 (stock pile)	.....	9,998
7	Brooke patrol yard (stock pile)	.....	7,998
7 T.C.	Sharbot Creek westerly	9.84	918
7	Madoc patrol yard (stock pile)	.....	7,990
2	Marysville (stock pile)	.....	9,973
	TOTALS	64.30	133,688

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
2	Jct. Hwy. 15 to Crystal Beach interchange	17.18	170
401	Crystal Beach interchange to Thousand Island Bridge Road	15.50	74
2	Crystal Beach interchange to interchange 401, Gananoque	23.70	900
708	Hwy. 401 to international boundary	1.35	45
2	Gananoque west limits to Kingston east limits	16.08	2,905
15	Jct. Hwy. 2 to Frontenac county line	19.80	4,358
15	Frontenac-Leeds county line to Crosby	16.06	450
32	Gananoque to Jct. Hwy. 15	11.03	375
42	Jct. Hwy. 15 (Crosby) Westport, south east limits	8.61	256
2	Kingston west limits to Bridge Street, Napanee	20.73	40
Old 38	Cataraqui to Kingston-Portland line	8.94	10
2	Napanee west limits to Trenton east limits	34.30	2,722
502	Bridge Street, Napanee to Jct. Hwy. 2, Marysville	8.54	150
41	Napanee, Centre Street to Jct. Hwy. 7	31.68	1,317
38	Kingston-Portland Twp. line, Jct. Hwy. 7	35.12	10,000
15	Jct. Hwy. 42 to Smiths Falls south limits	19.63	130
42	Delta west limits to Jct. Hwy. 15	8.10	95
29	Brockville north limits to Smiths Falls south limits	28.98	922
42	Jct. Hwy. 29 to Delta west limits	15.97	615
7 T.C.	Jct. Hwy. 41 to Jct. Hwy. 14	32.25	450
7 T.C.	Jct. Hwy. 43 to Jct. Hwy. 509	23.08	784
15	Smiths Falls north west limits to Jct. Hwy. 7	11.48	336
7 T.C.	Jct. Hwy. 509 to Jct. Hwy. 41	24.95	15,000
33	Kingston west limits to Glenora ferry dock	30.08	300
95	Hornes Point to Jct. Hwy. 96	7.19	2,149
96	Quebec Head to west end Con. 2	19.40	5,012
37	Jct. Hwy. 401 to Jct. Hwy. 7	27.52	407
	Trenton to Stirling	26.63	1,372
33, 14	Trenton north limits to Jct. Hwy. 14	14.88	1,387
401	Drommey side road to Jct. Hwy. 33	24.66	125
401	Camden East Road to Hwy. 15	18.33	30
401	Thousand Island Bridge Road to Hwy. 15	25.00	1,360
401	Jct. Hwy. 16 to Crystal Beach interchange	22.10	361
Secondary Road			
509	Clarendon to Snow Road	5.84	11,200
	TOTALS	654.69	65,807

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
401	Hwy. 401 and Hwy. 38 interchange	1.05	1960	0.50	0.55
401	C.N.R. subway, north of Napanee to road allowance between Lots 15 and 16, Richmond Twp.	2.26	1960	2.00	0.26
401	County road to Newburgh	0.46	1960	0.20	0.26
401	Napanee River, easterly 4.9 mi.	4.90	1960	0.90	4.00
401	Camden Road interchange to Odessa	5.60	1960	2.10	3.50
2	New entrance at Fort Henry and Hwy. 15	0.59	1960	0.40	0.19
7 T.C.	Sharbot Creek westerly 9.9 mi.	9.90	1960	2.50	7.40
32	Gananoque River bridge 2 mi. north of Gananoque	1.20	1960	0.20	1.00
33	Collins Creek to Kingston	3.67	1961	.....	3.67
401	Prescott to Hwy. 16	2.65	1961	.....	1.32
401	Tyendinaga Twp. line to road allowance, Lots 15 and 16, Richmond Twp.	3.94	1961	.....	1.18
401	Wyman side road to Tyendinaga line	4.36	1961	.....	3.92
401	Interchange at county road at Wallbridge side road	0.57	1961	.....	0.28
15	South of Seeleys Bay to south of Morton	7.74	1961	.....	7.74
38	Hwy. 38 at Eagle Lake	0.60	1961	.....	0.10
Secondary Road					
509	Clarendon to Mississippi	1.50	1961	.....	1.01
	TOTALS	50.99		8.80	36.38

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
401	Shannonville Road to Hwy. 401 interchange	0.32	1960	0.22	0.10	1,243
401	C.P.R. overhead bridge 1.75 mi. west of Hwy. 16	0.57	1960	0.20	0.37	10,038
401	C.N.R. subway to road allowance between Lots 15 and 16 Richmond Twp.	2.26	1960	0.26	2.00	1,332
401	Richmond Twp. bridge No. 12, county road to Newburgh	0.46	1960	.....	0.46	2,992
401	Interchange Hwys. 401 and 38	1.05	1960	.05	1.00	30,230
401	Camden Road interchange at Millhaven Creek	5.6	1961	.....	5.6	6,182
401	Hwy. 38 to Wilton Road, Odessa	6.92	1960	3.52	3.40	75,134
401	Napanee River easterly	4.9	1961	.....	4.9	7,013
401	Prescott to Hwy. 16	2.65	1961	.....	1.32	38,828
401	Wyman side road to Tyendinaga line	4.36	1961	.....	3.92	2,396
401	Interchange at county road to Wallbridge	0.57	1961	.....	0.28	11,531
401	Hwy. 401 to highway at Odessa.	0.39	1961	.....	0.39	23,829
2	Entrance to Fort Henry and Hwy. 15	0.59	1960	0.40	0.19	5,350
15	Morton to Elgin	5.86	1960	5.86	.....	316
7 T.C.	Sharbot Creek westerly	9.9	1960	.....	9.9	127,470
32	Gananoque River bridge 2 mi. north of Gananoque	1.2	1961	.....	1.2	9,990
33	Collins Creek to Kingston	3.67	1961	.....	3.67	134,561
Secondary Road						
509	Vicinity of Clarendon to Mississippi	1.50	1961	.....	1.01	23,613
	TOTALS	52.77		10.51	39.71	512,048

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
South of 401	Camden East patrol yard	Salt shed	1961	1961
7	Patrol garage, Madoc	Garage	1961	1961
33	Patrol garage, Stirling	Garage	1961	1961
33	Waiting room and toilets, Glenora ferry	Waiting rooms	1961	1961
2, 401	Garage and office at Crystal Beach	Garage	1961	1961
2	Marysville patrol yard	Salt shed	1961	1961
2	Marysville patrol yard	Salt shed	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		1,390	
Development roads built			4.74
Off-road parks maintained	11		
Roads snowploughed and kept open, King's Highways			741.84
Roads snowploughed and kept open, Secondary Highways	2		19.38
Roadside picnic places maintained	68		
Routine maintenance, King's Highways			741.84
Routine maintenance, Secondary Highways	2		19.38
Salt in sand, stockpiled		15,962	
Sand for winter maintenance		39,780	
Scale houses maintained	3		
Seeding by department's forces (sq. yds.)	1,631,590		
Shrubs received and planted this year	29,907		
Signs erected or replaced	1,575		
Snow fence erected, dismantled, stored			34
Weed control (gals.)	1,164		1,156
Zone painting on King's Highways (gals.)	11,161		988
Zone painting on Secondary Highways (gals.)	517		38

April 1, 1961 to March 31, 1962

FERRY "QUINTE"							FERRY "LOYALIST"							TOTALS		
														Totals — Both Ferries		
Year	Month	Days Worked	Trips	Cars	Trucks	Total	Year	Month	Days Worked	Trips	Cars	Trucks	Total	Cars	Trucks	Total
1961	April	27	341	2,215	73	2,288	1961	April	30	986	11,465	994	12,459	13,680	1,067	14,747
	May	31	1,343	12,694	975	13,669		May	12	367	3,674	456	4,130	16,368	1,431	17,799
	June	30	1,349	10,158	724	10,882		June	30	971	9,564	1,104	10,668	19,722	1,828	21,550
	July	31	1,457	16,950	705	17,655		July	31	1,040	15,755	998	16,753	32,705	1,703	34,408
	August	31	1,454	16,861	592	17,453		August	31	1,044	17,151	1,013	18,164	34,012	1,605	35,617
	September	30	1,336	11,366	588	11,954		September	30	991	11,056	817	11,873	22,422	1,405	23,827
	October	31	1,351	10,456	657	11,113		October	31	996	9,468	846	10,314	19,924	1,503	21,427
	November	30	1,022	6,521	468	6,989		November	30	892	7,776	808	8,584	14,297	1,276	15,573
	December	31	743	3,990	265	4,255		December	31	960	7,680	626	8,306	11,670	891	12,561
1962	January	31	265	701	46	747	1962	January	31	1,008	8,309	754	9,063	9,010	800	9,810
	February	12	88	294	22	316		February	28	1,065	8,056	711	8,767	8,350	733	9,083
	March	10	138	907	43	950		March	31	1,026	9,837	728	10,565	10,744	771	11,515
	Totals	325	10,887	93,113	5,158	98,271		Totals	346	11,346	119,791	9,855	129,646	212,904	15,013	227,917

Ferry "Quinte" — Not operating February 20 to February 28 inclusive. Not operating March 1 to March 21 inclusive.
Ferry "Loyalist" — at Ship Yard May 1 to May 21 inclusive.

"QUINTE"

Peak Traffic: July —	
Trips	1,457
Cars	16,950
Trucks	705
Total days worked	325
Total cars carried	93,113
Total trucks carried	5,158
Total trips	10,887

"LOYALIST"

Peak Traffic: August —	
Trips	1,044
Cars	17,151
Trucks	1,013
Total days worked	346
Total cars carried	119,791
Total trucks carried	9,855
Total trips	11,346

DISTRICT No. 9—OTTAWA

L. E. WALKER, P.Eng., District Engineer

Construction

Ottawa Queensway — *Stage 1* — Hurdman bridge to east city limits:

Minor work on the 5.7 miles of Queensway opened on November 25, 1960 was completed. Lighting of the Blair Road and Montreal Road interchange was completed this year.

Stage 2 — West city limits to Carling Avenue:

This section of Queensway, some 4.5 miles, was completed and opened to traffic on October 2, 1961. Lighting of the section was also completed in 1961.

Stage 3 — Carling Avenue to Bell Street:

Of the two earth grading and structure contracts awarded in 1960, one was completed. The other will be completed in 1962. One grading and structure contract was awarded in mid-1961. This section is 2.0 miles long and is 50 per cent complete.

Highway 16 —

The Manotick By-pass, 11.38 miles in length which includes a structure over the Jock River, was completed and opened to traffic in the fall of 1961. Resurfacing of the portion of Highway 16 which has been relocated will be completed in 1962.

Highway 17 —

On Highway 17 from Meath southerly 5.5 miles, the grade was completed and hot mix pavement placed in 1961. The street over the Snake River was also completed.

Highway 29 —

A grading and paving contract from Pakenham to Arnprior was awarded in 1961 and completed in mid year. Also as a part of this contract improvements were made to the roadway and drainage in the town of Arnprior and the village of Pakenham.

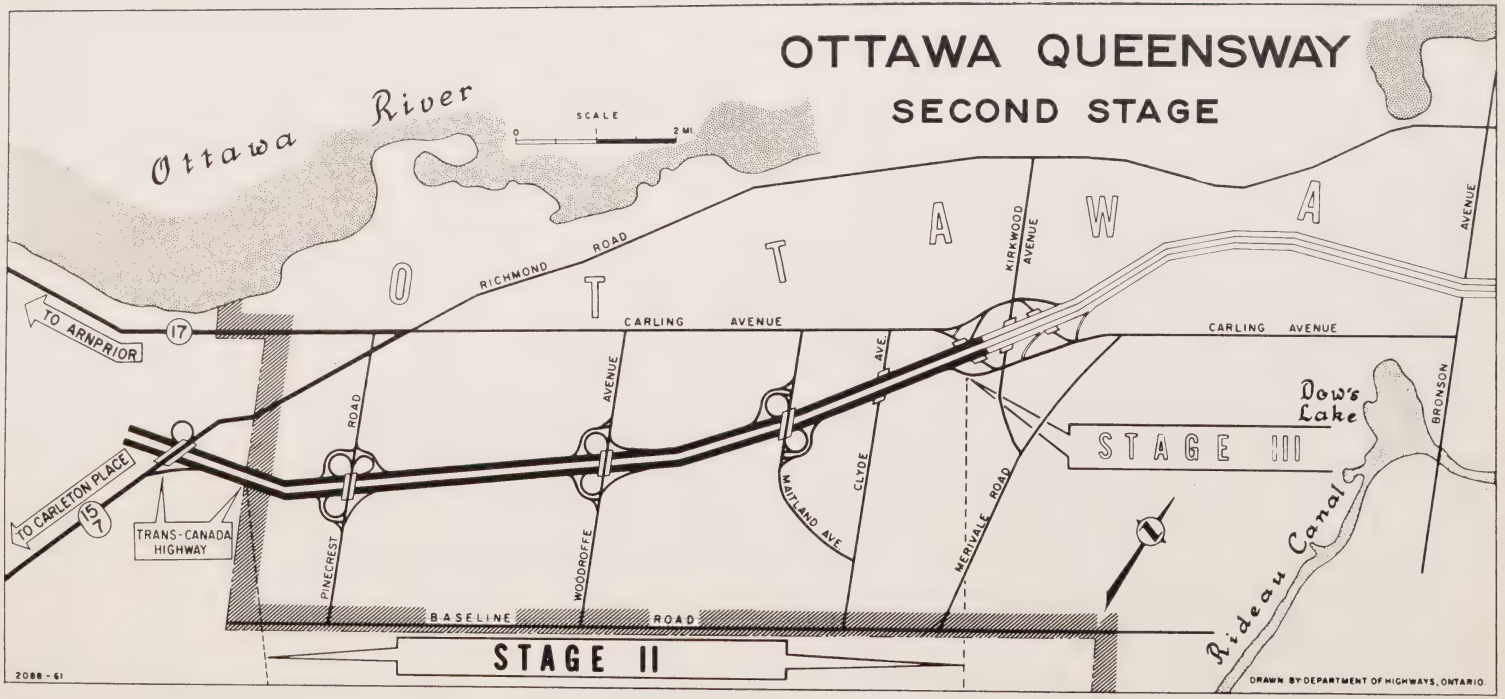
Highway 401 —

The interchange at Highway 16 was completed and opened to traffic in 1961. The east-bound lane from Highway 16 to Iroquois, 10.07 miles, was also completed and opened to traffic in 1961.

Also from Aultsville Road easterly 10.60 miles to Avenue Road, two grading contracts were awarded and are now 67 per cent complete. From the Moulinette Road easterly 5.8 miles, one grading and structure contract was awarded. The structures are 95 per cent complete and the grading is now 12 per cent complete. One contract, awarded for the west-bound lane from Cornwall to Summerstown county road, is 56 per cent complete. The section from Summerstown county road to Highway 2 is 71 per cent complete.

Maintenance

Highway 401 was opened from Iroquois to Johnstown, a distance of 10 miles. The Ottawa Queensway was opened from the Carling Kirkwood interchange to


OTTAWA QUEENSWAY
SECOND STAGE
Ottawa River
SCALE
0
2 MI
O T T A W A
RICHMOND ROAD
KIRKWOOD AVENUE
AVENUE
TO ARNPRIOR
17
CARLING AVENUE
CARLING AVENUE
Dow's Lake
BRONSON
STAGE III
TO CARLETON PLACE
15
17
TRANS-CANADA HIGHWAY
PINECREST ROAD
WOODROFFE AVENUE
MAITLAND AVE.
CLYDE AVE.
MERIVALE ROAD
1
Rideau Canal
BASELINE ROAD
STAGE II
2088-61
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO.



Ottawa Queensway looking west from Alta Vista Drive (Ottawa District).

Highway 7. Also, Highway 43 was extended from Winchester to Smiths Falls, a distance of 39 miles, by assumption of the county road.

A new maintenance patrol yard was constructed, graded and paved at Iroquois to service Highway 401. A five-bay metal garage was erected at this site and the entire area was landscaped. All work was carried out by day labour forces.

Property was purchased and a new patrol was organized at Merrickville to service the newly assumed portion of Highway 43.

A new sign and carpentry shop was completed at the district headquarters. Also, the district yard was paved and sidewalks constructed.

Extensive shoulder maintenance was continued throughout the district during the summer months.

Secondary Highways 508 and 511 were surface treated, a distance of 43 miles, with excellent results.

Acceleration and deceleration lanes were constructed at three entrances to Upper Canada Village and the Long Sault Parkway.

During the winter months, day labour clearing was carried out on a 300-foot right-of-way for Highway 401, from the Aultsville sideroad to 10.7 miles easterly.

Winter maintenance was very heavy this year due to an unusual amount of freezing rain.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
34	C.N.R.	Vankleek Hill subdivision	2 lights, 1 bell
34	C.N.R.	Vankleek Hill subdivision	2 lights, 1 bell
34	C.N.R.	Cornwall subdivision	2 lights, 1 bell
17 T.C.	C.P.R.	Renfrew subdivision	1 light
17 T.C.	C.P.R.	Renfrew	
43	C.P.R.	West of Chesterville	2 lights, 2 short arms
16	C.N.R.	Cornwall subdivision	
44	C.N.R.	Renfrew subdivision	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
Q'way	Hwys. 15 and 17 to Carling Avenue interchange	.....	1960	.....	11,768.91
Q'way	Carling Avenue east to Clarendon Avenue	.....	1960	.....	7,467.50
Q'way	Clarendon Avenue east to Loretta Avenue	.....	1960	.....	3,337.48
16	Manotick diversion to Jock River	5.2	1961	5.2	10,465.00
17	Meath to north of Cobden	5.50	1960	5.50	21,202.83
17	Through Lots 29 and 32, East Hawkesbury Twp.	0.72	1961	0.72	1,102.01
29	Pakenham to Hwy. 17	10.00	1961	10.00	31,555.51
401	1.0 mi. east of St. Andrews Road to 1.0 mi. east of Lancaster	.....	1961	.....	247.00
401	East from Hwy. 16 to Iroquois county road (south lane)	10.07	1960	10.07	1,515.16
401	Summerstown county road to Hwy. 2 east of Lancaster (north lane)	6.44	1961	6.44	1,543.00
401	Hwy. 16 interchange	1.31	1960	1.31	15,364.00
	D.H.O. yard, parking and storage lot	.....	1961	.....	5,099.70
	TOTALS	37.03		37.03	170,968.10

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
17	Alternate, Chute-a-Blondeau to Hwy. 17 T.C.	1.7	6,387	225.90

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
16	Resurfacing old Hwy. 16, Manotick	6.06	9,440

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
Secondary Highways				
508	Calabogie to Brightside	43.3	102,924	4,993.60
511	Burnstown to Blackdonald village			

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
Q'way	T.C., Merivale Road	1960	1961	Reinforced concrete
Q'way	T.C., Island Park Drive	1960	1961	Composite
Q'way	T.C., Holland Avenue	1960	1961	Reinforced concrete
Q'way	T.C., Parkdale Avenue	1960	1961	Reinforced concrete
Q'way	T.C., Fairmont Avenue	1960	1961	Reinforced concrete
Q'way	T.C., Bayswater Avenue	1960	1961	Reinforced concrete
16	Jock River bridge — Manotick diversion	1960	1961	Composite
16	C.N.R. overhead, north of Johnstown	1960	1961	Reinforced concrete
17	Snake River bridge, north of Cobden	1960	1961	Composite
401	Hwy. 16 overpass	1960	1961	Reinforced concrete
401	Cornwall Twp., C.P.R. overhead	1960	.....	Composite

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Sq. Yds. Placed 1961–62
Q'way	Hwys. 15 and 17 to Carling Avenue interchange	4.20	1960	2.10	2.10	77,028
401	Hwy. 16 interchange	1.31	1961	.....	1.31	19,720
401	East from Hwy. 16 interchange to Iroquois county road (south lane)	10.07	1961	.....	10.07	139,175
	TOTALS	15.58		2.10	13.48	235,923

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
Q'way	From Hwy. 15 and 17 easterly to Carling Avenue interchange	2.20	54,510.51
Q'way	Carling Avenue interchange to Clarendon Avenue	0.38	17,890.26
Q'way	Clarendon Avenue to Loretta Avenue	1.08	7,938.51
Q'way	Loretta Avenue to Bronson Avenue	0.10	122.00
16	Manotick diversion northerly to Jock River	11.38	88,676.00
17	Through Lots 29 to 32, East Hawkesbury Twp.	0.72	9,809.38
17	Meath to north of Cobden	4.00	73,414.32
29	Pakenham to Hwy. 17	10.00	54,899.37
34	5 mi. south of Vankleek Hill, as directed	.....	4,995.76
401	Hwy. 16 interchange	1.01	72,182.00
401	East from Hwy. 17 interchange to Iroquois county road	10.07	165,830.57
	TOTALS	40.94	550,268.68

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
17	From Meath to north of Cobden	5.50	1960	.....	5.50
16	Jock River bridge to Todd's Corners	5.30	1960	2.50	2.80
Q'way	Carling Avenue interchange to Clarendon Avenue	0.40	1960	0.10	0.30
Q'way	Clarendon Avenue to Loretta Avenue	1.08	1960	0.30	0.78
Q'way	Loretta Avenue to Bell Street	0.50	1961	.....	0.16
17E	Through Lots 29 to 32 inclusive, east Hawkesbury Twp.	0.72	1961	.....	0.72
401	Aultsville Road easterly 5.3 mi.	5.30	1961	.....	4.70
401	5.3 mi. east of Aultsville Road to Avonmore Road	5.01	1961	.....	3.60
401	Moulinette Road easterly 5.8 mi.	5.80	1961	.....	3.59
401	Brookdale Avenue to Toll Gate Road	1.68	1961	.....	0.20
401	Cornwall to Summerstown county road	7.37	1961	.....	4.12
401	Summerstown county road to Hwy. 2	6.06	1961	.....	4.30
	TOTALS	44.72		2.90	30.77

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
16	Jock River bridge to Todd's Corners	5.30	1961	.....	5.30	172,434
17	Through Lots 29 to 32, East Hawkesbury Twp.	0.72	1961	.....	0.72	17,634
17	Meath to north of Cobden	5.50	1960	3.00	2.50	6,500
Q'way	Jct. Hwys. 15 and 17 to Carling Avenue interchange	4.20	1960	2.10	2.10	100,394
Q'way	Carling Avenue to Clarendon Avenue	0.38	1961	.....	0.38	77,120
401	Hwy. 16 interchange	1.31	1960	1.00	0.31	81,343
401	Hwy. 16 interchange to Iroquois	10.07	1960	8.00	2.07	193,140
401	St. Andrews Road to 1 mi. west of Lancaster	14.40	1960	0.50	5.00	390,500
	TOTALS	41.88		14.60	18.38	1,039,065

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
43	Patrol yard, Merrickville	Salt shed	1961	1961
2	Patrol yard, Iroquois	Salt shed	1961	1961
2	Patrol yard, Iroquois	Patrol garage	1961	1961
	Ottawa District yard	Sign shop	1961	1962
17 T.C.	Patrol yard, Cumberland	Patrol garage	1960	1960
17 T.C.	Patrol yard, Cumberland	Salt shed	1960	1960
17 T.C.	Hawkesbury patrol site	Salt shed	1960	1960
17 T.C.	Hawkesbury patrol site	Patrol garage for Patrol 4	1960	1960
17W	Cobden patrol site	Salt shed	1960	1960
	Ottawa District yard	District laboratory	1959	1959
	Ottawa District office	District office staff	1960	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	4	.....	.....
Off-road parks maintained	6	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	649.66
Roads snowploughed and kept open, Secondary Highways	.....	.....	43.09
Roadside picnic places maintained	20	.....	.....
Routine maintenance, King's Highways	.....	.....	649.66
Routine maintenance, Secondary Highways	.....	.....	43.09
Salt for de-icing roads (raw)	.....	17,102	.....
Salt in sand, stockpiled	.....	1,287	.....
Sand for winter maintenance	.....	17,235	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (sq. yds.)	1,190,640	.....	.....
Trees and shrubs received and planted this year	8,253	.....	.....
Signs erected or replaced	3,779	.....	.....
Weed control	.....	.....	422
Zone painting on King's Highways	.....	.....	808
Zone painting on Secondary Highways	.....	.....	20

DISTRICT No. 10—BANCROFT

C. R. ROBERTSON, P.Eng., District Engineer

Construction

The grading contract over eight miles of Highway 41 southerly from Denbigh was ultimately completed in August.

Surcharges were placed over several muskeg areas in order to accelerate settlement. The principle of stage paving was also adopted in order to provide the best possible travelling surface to serve this popular tourist area, but at the same time, to allow any further settlement to take place before the top course of paving is laid.

Paving was also completed on six miles of Highway 60 between Barry's Bay and Wilno, and on a total of nine miles of Secondary Highway 132 in two sections between Dacre and Renfrew.

A new concrete structure, replacing a narrow hump-backed bridge in the centre of the shopping area, was built over Brudenell Creek, which roughly bisects the village of Killaloe.

A second crossing of the creek was required as a detour during construction. At the request of the village council, a permanent structure was installed, on a shared cost basis, using a surplus steel truss and new concrete abutments.

Mulch paving over both structures and the detour was laid by the Department's own forces.



Highway 60—1 mile west of Wilno (Bancroft District).

Work on a grading contract from Cormac to Brudenell, Secondary Highway 512, involved construction on long grades some of which were as steep as 13 per cent. In spite of this, and further difficulties in the form of wet side-hill cuts, the contract was very nearly completed before the winter shut-down.

District survey crews also performed some pre-engineering work on a forest access road which is due to be built next year under an equipment rental contract.

Approximately half of the eight miles of grading on Highway 62 north of Bannockburn was completed.

A large program of day labour projects was undertaken by the district, including completion of grading and drainage on a four-mile diversion on Highway 127 north of Lake St. Peter. Continued improvement was made also on Highways 504, 506, 515 and 500, with reconstruction being further advanced. Additional mulch pavement was also laid for 1.5 miles on Highway 127 north of Lake St. Peter and for some 3 miles on Highway 504 from Apsley east.

Major improvements were made under winter works with the complete reconstruction at the intersection of Highways 62 and 620; the construction of a 55-foot timber bridge at Papineau Creek, seven miles east of Maynooth and consequent opening of the two-mile diversion to traffic. Further a hazardous location on Highway 41 immediately south of Mazinaw Lake was corrected with a grading drainage and granular base project.

Sundry other projects scattered throughout the district were also completed, providing employment for over 300 men. Said works including clearing along the right-of-way, picnic site construction, minor grading, etc.

Maintenance

During the year construction began on a new four-bay patrol garage at Cloyne which will greatly improve facilities at this location. Chain link fencing was erected at the Bancroft patrol yard.

Some 17 miles of county road from Eganville easterly through Douglas to Highway 17 were assumed during the year as a continuation of Highway 60. Intensive maintenance was carried out on this stretch of road and included extensive repairs to two large concrete culverts as well as considerable mulch patching and drainage improvement.

Surface treatment was carried out on 35 miles of highway. Cationic emulsion was used again but a limestone chip was used rather than a trap rock chip as in the previous year. Results with the limestone chip have proved equally satisfactory.

Bituminous prime dust layer was applied to 101 miles of secondary highways.

Zone painting, which included extensive pre-marking, was completed over 477.5 miles.

Automatic signals were installed at railway crossings on Highway 62 west of Pembroke and Secondary Highway 512 west of Eganville.

More than 800,000 square yards were seeded by Department forces and over 2,800 road signs were erected or replaced.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
62	Interchange track between C.N.R. and C.P.R.	Stafford Twp.	2 lights, 1 bell
512	C.N.R.	Grattan Twp.	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
41	Denbigh to Kilpecker Creek	8.16	1961	8.16	13,005.33
60	Barry's Bay to Wilno	6.14	1961	6.14	16,600.08
132	Dacre to Shamrock county road 5 to Renfrew.	9.20	1961	9.20	9,128.17
	TOTALS	23.50		23.50	38,733.58

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
41	Godin Creek, 1.5 mi. north of Griffith	0.28	0.28	515
62	Papineau Creek revision	0.63	0.63	1,412
127	11.8 to 13.5 mi. north of Lake St. Peter	1.70	1.70	2,954
500	Jct. Hwy. 28 to Bancroft village limits	2.50	2.50	4,125
504	Jct. Hwy. 28 easterly	3.20	3.20	5,609
504	Glen Alda westerly	0.78	0.78	1,287
512	Brudenell Creek, village of Killaloe	1.12	1.12	1,516
	TOTALS	10.21	9.21	17,418

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
500	Bancroft to Hermon	14.5	35,715	1,017.19
504	Apsley to Glen Alda (north and south loops)	29.0	87,671	2,349.21
506	Jct. Hwy. 41 to Plevna	22.1	57,665	2,123.79
513	Dacre to Caldwell	10.5	26,998	953.04
515	Combermere to Quadville (various locations)	1.9		171.46
517	Combermere to Carlow Twp. road	9.9	29,985	755.18
523	Madawaska to Lyell-Wicklow Twp. line	13.1	32,802	1,109.33
	TOTALS	101.1	270,836	8,479.20

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
41	Denbigh to Kilpecker Creek	0.58	551.04

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
41	Pembroke southerly	18.9	52,379	2,955.65
60	Madawaska easterly	3.0	9,653	462.73
62	Alice southerly	1.0	2,800	86.75
62	Bancroft northerly	9.1	28,132	1,154.25
127	10 mi. north of Lake St. Peter northerly	3.0	5,285	505.30
	TOTALS	35.0	98,249	5,164.68

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
41	Godin Creek, 1.5 mi. north of Griffith	1960	1961	Twin rigid frame, box culvert
512	Brudenell Creek, village of Killaloe	1960	1961	Reinforced concrete, rigid frame

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
41	Denbigh to Kilpecker Creek	7.97	26,165.15
41	Denbigh to Kilpecker Creek (stockpiled)	.....	9,996.41
41	Godin Creek, 1.5 mi. north of Griffith	0.28	1,823.04
60	Barry's Bay to Wilno	6.14	13,151.06
62	Bannockburn northerly (stockpiled)	.....	8,007.96
127	11.8 to 13.3 mi. north of Lake St. Peter (stockpiled)	.....	740.48
132	Dacre to Shamrock county road 5 to Renfrew	9.20	10,050.96
504	Glen Alda to 1.7 mi. west (stockpiled)	.....	6,018.07
512	Brudenell Creek, village of Killaloe	0.05	449.19
	TOTALS	23.64	76,402.32

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
41	Denbigh to Kilpecker Creek	.....	588
60	Barry's Bay to Wilno	.....	978
62	Jct. Hwys. 62 and 620	0.53	186
62	Bannockburn northerly	.....	84
127	4.8 to 7.4 mi. north of Lake St. Peter	.....	357
127	Robinson Lake to Jct. Hwy. 60	0.34	492
132	Dacre to Shamrock	.....	353
500	Brownson Lake westerly	0.27	251
500	Bowen's Corners	0.80	1,202
500	Jct. Hwy. 28 to Bancroft limits	2.50	6,368
504	Glen Alda westerly	1.70	2,571
506	Vicinity of Marble Lake	1.89	948
512	Brudenell to Cormac	.....	171
515	Combermere to Jewelville	0.60	1,011
	TOTALS	8.63	15,560

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
41	Denbigh to Kilpecker Creek	7.97	1959	.....	7.97
41	South of Mazinaw Lake	1.00	1961	.....	0.42
62	Bannockburn northerly	8.50	1961	.....	4.50
62	Papineau Creek revision	2.38	1960	0.80	1.38
62	Purdy to Bell's Rapids Road	0.80	1961	.....	.....
62	Jct. Hwys. 62 and 620	0.89	1961	.....	0.53
127	McCoy Lake to Robinson Lake	1.10	1960	.....	1.10
127	Robinson Lake to Jct. Hwy. 60	2.30	1961	.....	0.34
127	4.8 to 7.4 mi. north of Lake St. Peter	2.60	1960	.....	2.60
500	Bowen's Corners	0.80	1959	0.28	0.52
500	Brownson Lake westerly	0.50	1961	.....	0.27
500	Jct. Hwy. 28 to Bancroft village limits	2.50	1961	.....	2.50
504	Glen Alda to Chandos Lake	4.00	1959	1.00	0.70
506	Vicinity of Marble Lake	2.37	1960	.....	1.89
512	Brudenell to Cormac	7.10	1960	.....	7.10
512	Brudenell Creek, village of Killaloe	0.05	1960	.....	0.05
515	Combermere to Jewelville	2.16	1960	0.30	0.60
620	2 mi. west of Coe Hill	0.38	1961	.....	.....
	TOTALS	47.40		2.38	32.47

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
41	Denbigh to Kilpecker Creek	7.97	1959	7.97	203,697.97
60	Barry's Bay to Wilno	6.14	1961	6.14	3,751.19
62	Bannockburn northerly	8.50	1961	4.50	104,430.50
512	Brudenell to Cormac	7.10	1961	7.10	253,902.60
512	Brudenell Creek, village of Killaloe	0.05	1961	0.05	1,749.81
	TOTALS	29.76		25.76	567,532.07

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Development roads built	.....	.....	17.2
Roads snowploughed and kept open, King's Highways	7	.....	411.60
Roads snowploughed and kept open, Secondary Highways	10	.....	171.46
Roadside picnic places maintained	25	.....	.....
Routine maintenance, King's Highways	.....	.....	411.60
Routine mantenance, Secondary Highways	.....	.....	171.46
Salt for de-icing roads (raw)	.....	3,258	..
Salt in sand, stockpiled	.....	1,404.40	
Sand for winter maintenance	.....	41,520	
Scale houses maintained	2	.....	
Seeding by department's forces (sq. yds.)	822,800	.....	
Shrubs received and planted this year	11,080	.....	.....
Signs erected or replaced	2,879	.....	.....
Snow fence erected, dismantled, stored	.....	.....	25.28
Snow hedges planted this year	.....	.....	12.12
Weed control	.....	.....	64
Zone painting on King's Highways (gals.)	6,622	.....	432.6
Zone painting on Secondary Highways (gals.)	712	.....	44.9

DISTRICT No. 11—HUNTSVILLE

H. C. DERNIER, P.Eng., District Engineer

Construction

During 1961–62 there was a considerable reduction in the volume of construction work carried out in the Huntsville district as compared to previous years.

Grading work on Highway 69 from 10 miles south of Parry Sound to two miles north of Nobel, including the Parry Sound By-pass and the new bridge over the Seguin River on same, was completed. Base course paving was also completed on this section, opened to traffic in the late fall. Resurfacing of Highway 69B and the connecting link on same through Parry Sound will be completed early this year.

The paving of reconstructed Highway 11 from the Perry-Armour township line to the North Bay district boundary was completed.

Grading of Highway 60 from the west gates of Algonquin Park to Smoke Creek was completed and the section paved. Grading of the section of Highway 60 from Smoke Creek to Algonquin Park headquarters (boundary of Bancroft district) was started in late fall and continued throughout the winter. It is expected that this work will be completed in the early summer and later paved.

Grading work by D.H.O. forces was carried out during the summer and winter as well on Secondary Highways 501, 503, 518, 519, 532 and King's Highway 124.

Cold mix paving of new grade and resurfacing of old pavements (as detailed in this report) was also carried out by D.H.O. forces.

The following new bridges were started in the fall and work carried out during the winter on Highway 60 at the Oxtongue River and Secondary Highway 518 at the Magnetawan River. It is expected these will be completed in early midsummer. No new equipment or techniques were employed.

The principal difficulty encountered was in the attempted use of asphalt cement, which was deficient in viscosity for hot mix paving. On two contracts the results obtained were such that it was necessary to obtain a better grade of asphalt from another supplier in order to get satisfactory results.

Maintenance

Routine maintenance was carried out throughout the district in much the same manner as in past years.

Increased allotment for this work enabled us to carry out a slightly more extensive program of weed and brush spraying, guide rail painting, etc., than during the previous year.



C.N.R. Overhead—Highway 69 (T.C.H.) on Nobel Diversion (Huntsville District).

The very favourable weather experienced in the late winter and early spring of 1961 resulted in much less than usual damage to roads during the spring break-up.

The winter of 1961–62 was difficult for winter maintenance. This fact, coupled with a demand for a higher standard, increased number of "Shifts" on snow-ploughs, road patrols, etc., very greatly increased our winter maintenance costs as compared to the previous winter.

The installation of a mobile short-wave radio system in the district in November proved quite useful for supplying road information, etc. Whether the results obtained justified the rather heavy expenditure is questionable, however.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
11	5 mi. south of Burks Falls to 9.57 mi. northerly	9.57	1960	9.57	28,243.87
11	Hwy. 11 and Vankoughnet Road intersection	.....	1961	.....	125.00
60	Algonquin Park west gate easterly 7.88 mi.	7.88	1961	7.88	12,099.82
79 T.C.	Hayes Corners to Parry Sound By-pass	10.18	1961	10.18	26,905.02
69 T.C.	From south end of Parry Sound By-pass to 2 mi. north of Nobel	9.68	1961	9.68	27,741.00
Old 69	Hayes Corners to Parry Sound By-pass. By-passed portion of old Hwy. 69	2.53	1961	2.53	4,887.61
Old 69	By-passed portion of old Hwy. 69 through Parry Sound	1.36	1961	1.36	74.00
Old 69	By passed portions of old Hwy. 69 including weigh scale site	1.34	1961	1.34	877.00
532	Bracebridge north limits to 3.2 mi. northerly	3.2	1961	3.2	4,549.89
	TOTALS	45.74		45.74	105,503.21

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
109	Jct. Secondary Hwy. 500, east Jct. Hwys. 109 and 111.	7.45	7.45	12,290
121	Kinmount, Jct. Hwy. 35	3.00	3.00	4,500
516	Jct. Hwys. 516 and 532 (Patterson's Corners)	.30	.30	450
527	Huntsville-Baysville (isolated sections)	1.50	1.50	2,250
529	Jct. Bayfield Wharf Road, south Jct. Hwy. 69	4.60	4.60	6,900
532	Lone Pine, Patterson's Corners (sections)	1.20	1.20	1,80
532	2.7 mi. west of Rosseau to 5.7 mi. west of Rosseau	3.00	3.00	4,500
612	Jct. Hwy. 103 to Jct. Hwy. 69	7.00	7.00	10,500
	TOTALS	28.05	28.05	43,190

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
109	Vicinity of Jct. Hwys. 109 and 111	1.0	2,750	75
111	Dyno Mine, 3 mi. north	3.0	8,250	255
124	4.3 mi. east of McKellar, Jct. Secondary Road 510	16.8	56,200	1,275
Old 500	East end to west end of Irondale By-pass	3.6	9,900	270
501	Jct. Hwy. 103 to Honey Harbour	9.1	25,000	625
503	5.1 mi. west of Norland to Norland	4.4	12,100	330
514	Hwy. 60 to Interlaken	10.0	27,500	750
518	Hwy. 69 to Orrville	12.0	23,000	900
519	Eagle Lake to Redstone Lake	4.1	11,300	300
519	1.5 mi. south of Haliburton to Hwy. 121	19.4	63,400	1,645
520	Dunchurch to Ardbeg	16.5	45,500	1,238
520	Magnetawan to Jct. Hwy. 124	1.9	5,300	150
530	Carnarvon to Jct. Hwy. 519	12.0	23,000	900
532	Shadow River to 5.5 mi. west (sections)	3.5	9,157	262
	TOTALS	117.3	322,357	8,945

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
121	Foxes Corners to Essonville	7.2	18,000	860.00
500	Tory Hill to Wilberforce	8.0	20,000	960.00
500	Irondale By-pass	3.6	9,000	430.00
Old 500	East to west of Irondale By-pass	3.6	9,000	430.00
527	Huntsville to Baysville	15.0	37,824	1,735.26
	TOTALS	37.4	93,824	4,415.26

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Magnetawan River bridge	1959	1961	Structural steel and reinforced concrete
60	Oxtongue Narrows bridge	1961	.....	Structural steel and reinforced concrete
60	Smoke Creek bridge	1960	1961	Timber
69 T.C.	Boyne River bridge extension	1960	1961	Reinforced concrete
69 T.C.	Boyne River bridge	1960	1961	Reinforced concrete
69 T.C.	Seguin River bridge, Parry Sound By-pass	1960	1961	Structural steel and reinforced concrete
69 T.C.	C.N.R. overhead, McDougall Twp.	1960	1961	Structural steel and reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	Severn bridge to High Falls	24.00	3,500
11	5 mi. south of Burks Falls to 9.57 mi. north	9.57	42,731
60	Approaches to Oxtongue Lake Narrows bridge	0.32	2,175
60	From Algonquin Park west gate easterly 7.88 mi.	7.88	83,633
69	Gravenhurst to Glen Orchard	23.00	1,500
69	Hayes Corners to Parry Sound By-pass	10.20	165,034
69	Parry Sound By-pass	3.46	35,402
69	From south end of Parry Sound By-pass to 2 mi. north of Nobel	12.38	64,605
69	By-passed portions of old Hwy. 69	2.53	8,564
69	D.H.O. patrol yard, 3.5 mi. south of Parry Sound	.....	2,664
69, 11	Various locations on Hwys. 69 and 11	.....	4,982
109	5 mi. east of Secondary Hwy. 500 to 6.5 mi. easterly	1.50	2,365
109, 111	From Jct. Secondary Hwys. 500 and 111 to the west Jct. Hwys. 109 and 111	10.50	25,500
124	From Secondary Hwy. 510 to Secondary Hwy. 520	1.60	3,206
124	McKellar to McKellar north limits	0.40	710
124	Magnetawan to McKellar, various	25.00	1,100
518	From 4 mi. west of Orrville to 8 mi. west of Orrville	4.00	9,800
520	Dunchurch to Ardbeg	15.00	4,000
530	Carnarvon to Jct. Secondary Hwy. 519	12.00	10,000
532	Bracebridge north limits to 3.2 mi. northerly	3.20	21,300
532	From 4.2 mi. north of Bracebridge to 4.6 mi. north	0.40	770
612	From Jct. Hwy. 103 to Jct. Hwy. 69	7.00	17,992
	TOTALS	173.94	511,533

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	Crown Hill to 4.0 mi. north of Burks Falls	104.7	3,954
12 T.C.	Atherley Narrows to Midland	35.2	220
35	Jct. Hwy. 11B (Huntsville) to Haliburton-Victoria boundary	75.0	1,728
60	Jct. Hwys. 60 and 35 (Dwight) to Algonquin Park headquarters	28.4	195
69 T.C.	Jct. Hwy. 11 (Gravenhurst) to 1.5 mi. north of Pointe-au-Baril	84.9	664
103 T.C.	Jct. Hwy. 12 (Waubaushene) to Jct. Hwy. 69 (Footes Bay)	31.4	182
109	Jct. Secondary Hwy. 500 to Cardiff Twp. line	12.4	30
111	Jct. Secondary Hwy. 500 to Dyno Mines	7.6	12
118	Jct. Hwy. 69 (Glen Orchard) to Jct. Hwy. 35 (Dorset)	55.6	178
121	Kinmount to Tory Hill	42.0	409
124	Jct. Hwy. 59 to Jct. Secondary Hwy. 510 (Magnetawan)	39.2	5,059
400	Craighurst to Coldwater	12.4	16
500	Kinmount to Hwy. 111	51.1	870
501	Jct. Hwy. 103 to Honey Harbour	9.1	1,000
503	Kinmount to Norland	10.0	576
507	Gooderham, 5 mi. southerly	5.0	120
514	Hwys. 35 and 60 to Interlaken	10.0	1,730
516	Jct. Hwy. 11 to Windermere	15.7	100
518	Hwy. 69 to Kearney	46.0	3,434
519	Redstone Lake to Hwy. 121	33.6	4,100
520	Hwy. 11 at Burks Falls to Ardbeg	33.7	1,620
525	Gravenhurst, Gravenhurst Sanatorium	1.7	8
527	Huntsville to Baysville	16.7	2,000
529	Jct. Hwy. 69 to Bayfield Inlet	7.6	16
530	Carnarvon, Secondary Hwy. 519	12.0	2,000
532	Jct. Hwy. 69 to Jct. Hwy. 11	43.2	175
559	South of Jct. Hwy. 69 to north of Jct. Hwy. 69	13.5	28
592	Novar to Emsdale	9.8	104
612	Jct. Hwy. 103 to Jct. Hwy. 69	7.0	64
632	Jct. Hwy. 118 to Jct. Secondary Hwy. 532	17.0	48
	TOTALS	871.5	30,640

Grading and Culverts

Hwy. No.	Location	Total Miles in	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
11	5 mi. south of Burks Falls to 9.57 mi. northerly	9.57	1960	8.13	1.44
60	Algonquin Park gates to 7.88 mi. easterly.	7.88	1961	1.89	5.99
60	Approaches to Oxtongue Lake Narrows bridge	0.32	1961	.....	0.32
69 T.C.	Parry Sound By-pass	3.46	1960	1.73	1.73
69 T.C.	Hayes Corners to Parry Sound By-pass	10.20	1960	5.00	5.20
69 T.C.	North end of Parry Sound By-pass to 2 mi. north of Nobel	5.88	1960	4.70	1.88
109	Hwy. 500 to Hwy. 111	6.00	1960	.....	6.00
124	3.2 mi. north of McKellar to 4.5 mi. north of McKellar	1.30	1960	1.00	.30
124	Secon. Hwy. 510 to Sec. Hwy. 520	1.60	1960	.....	1.60
124	McKellar, north limits	0.40	1961	.....	0.40
518	7.4 mi. east Hwy. 69 to 8.4 mi. east Hwy. 69	12.00	1955	6.50	1.00
519	From approximately 1.5 mi. east of Hwy. 121 to 2.9 mi. east	1.40	1961	.....	1.40
532	2.4 mi. west of Rosseau to 4.2 mi. west of Rosseau	1.80	1960	1.50	.30
532	4.2 mi. north of Bracebridge to 4.6 mi. north of Bracebridge	0.40	1960	0.30	.10
532	Bracebridge north limits to 3.2 mi. northerly	3.20	1960	.....	3.20
	TOTALS	65.41		30.75	30.86

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
11	5 mi. south of Burks Falls to 9.57 mi. northerly	9.57	1960	8.13	9.57	41,815
60	Approaches to Oxtongue Lake Narrows bridge	0.32	1961	.....	0.20	7,258
60	Algonquin Park gate easterly 7.88 mi.	7.88	1960	.....	7.88	260,261
60	Smoke Creek easterly to Huntsville district boundary	6.84	1961	.....	0.41	12,392
69 T.C.	Hayes Corners to Parry Sound By-pass	10.20	1960	5.00	5.20	294,834
69 T.C.	By-passed portions of old Hwy. 69 and D.H.O. patrol yard	2.51	1961	.....	2.51	11,746
69 T.C.	From south end of Parry Sound By-pass to 2 mi. north of Nobel including by-passed portions of old Hwy. 69 and weigh scale site	12.38	1961	.....	12.38	13,918
69 T.C.	Parry Sound By-pass	3.46	1960	.....	3.46	36,653
69 T.C.	North end of Parry Sound By-pass to 2 mi. north of Nobel.	5.88	1960	4.70	1.18	97,850
69 T.C.	C.N.R. overhead, McDougall Twp.	0.08	1961	.....	0.08	434
109	5 mi. east of side road 500 to 6.5 mi. east	1.50	1960	....	1.50	23,384
124	From Hwy. 510 to Hwy. 520	1.60	1961	.....	1.60	67,256
124	3.2 mi. north of McKellar to 4.5 mi. north of McKellar	1.30	1960	1.00	0.30	.....
124	McKellar to McKellar north limits	0.40	1961	.....	0.60	6,284
503	From Norland easterly 5.0 mi.	5.00	1961	.....	5.00	1,243

Granular Base on New Grading (Cont'd)

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
518	7.4 mi. east of Hwy. 69 to 8.4 mi. east of Hwy. 69	12.00	1955	6.50	5.50	
532	2.4 mi. west of Rosseau to 4.2 mi. west of Rosseau	1.80	1960	1.50	0.30	
532	North limits of Bracebridge northerly 3.2 mi.	3.20	1960		3.20	30,420
532	4.2 mi. north of Bracebridge to 4.6 mi. north of Bracebridge	0.40	1960	.....	0.40	4,411
	TOTALS	86.32		26.83	61.27	910,159

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
516	North Jct. Hwys. 516 and 532, 0.3 mi. easterly	0.3	1961	0.3	2,950
612	Jct. Hwy. 103 to Jct. Hwy. 69	7.0	1961	7.0	14,300
	TOTALS	7.3		7.3	17,250

New Buildings

Hwy. No.	Location	Type of Building	Work Begun	Completed
11	Ardtrea	Radio equipment	1961	1961
11	Huntsville	Radio equipment	1961	1961
69	Foley Twp.	Patrol equipment storage	1961	1962
69	Shawanaga	Equipment storage	1961	1961
69	Parry Sound	Weigh scale	1961	1962
69	Parry Sound	Radio equipment	1961	1961
121	Haliburton	Radio equipment	1961	1961
527	Baysville	Equipment storage	1961	1961
532	Rosseau	Equipment storage	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	5	(gals.) 171	
Calcium dust layer on gravel roads	.....	70	36
Off-road parks maintained	12	.....	.....
Roads snowploughed and kept open, King's Highways	12	.....	596.9
Roads snowploughed and kept open, Secondary Highways	18	.....	304.5
Roadside picnic places maintained	47	.....	.....
Routine maintenance, King's Highways	12	.....	596.9
Routine maintenance, Secondary Highways	18	.....	304.5
Salt for de-icing roads (raw)		11,250	
Salt in sand, stockpiled		2,632	
Sand for winter maintenance		108,000	
Scale houses maintained	3		
Seeding by department's forces (sq. yds.)	293,595		
Shrubs received and planted this year	6,426		
Signs erected or replaced	3,664		
Snow fence erected, dismantled, stored	.....		71.0
Weed control (gals.)	395		567.0
Zone painting on King's Highways (gals.)	10,669		557.3
Zone painting on Secondary Highways (gals.)	3,943		188.3

DISTRICT No. 13—NORTH BAY

J. D. FOSTER, P.Eng., District Engineer

Construction

The grading, granular base and paving of Highway 17 from Deep River to Point Alexander was completed.

The timber bridge on Highway 11 at the Tomiko River was replaced with a concrete and steel beam structure. While some finishing work remained to be done, the new bridge was open to traffic in November.

Two contracts for the grading and paving of Highway 11 from Sundridge to 1 mile south of Trout Creek were awarded this year. Work progressed very well and the southerly 6.8 miles were paved with the first base course before the contractors closed down for the winter.

Contracts for new structures at Bissett Creek on Highway 17 and the Veuve River bridge on Highway 64 were awarded during the fall. The contractors worked on these structures throughout the winter and, despite severe weather, work progressed very satisfactorily.

An extensive day labour program was again carried out during the fall and winter. The work consisted of pre-contract clearing, granular lifts, grading, and the replacement of the timber structure over Black Creek on Highway 124 with a twin 18′ x 10′ concrete culvert.

Maintenance

Normal maintenance was carried out on all highways throughout the district.

In addition, 10 miles of granular lift, 14 miles of mulch pavement, and 53 miles of prime dust layer were placed by district forces.

Considerable clearing of right-of-way was carried out as a winter unemployment relief program.

Several small timber bridges were removed on Highway 539 and replaced by culverts.

The development road from Highway 17 to Kiosk was taken over by the district, and designated as Secondary Highway 630.

Illumination was installed at the intersection of the North Bay By-pass and Highway 17B (Fisher Street).

The intersection of Highway 11 and Birch's Road was widened to accommodate a passing lane, illumination was also installed.

A truck passing lane was added on Thibeault Hill, north of North Bay on Highway 11. This greatly relieved the congestion caused by slow-moving vehicles on this long grade.



Paving operations on Highway 17 west of Deep River (North Bay District).

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
17	T.C. C.P.R.	1.5 mi. northwest of Petawawa	Flash. lights, bell
539	C.N.R.	East of Desaulniers	Flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
11	1 mi. north of Sundridge to 2 mi. north of South River	6.81	1961	.....	11,244
11	Tomiko bridge	0.11	1961	.....	219
11	Birches Road	0.25	1961	0.25	300
17	Deep River to Point Alexander	4.24	1960	4.24	16,385
	TOTALS	11.41		4.49	28,148

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
63	Quebec boundary to Big Fournier Creek	2.7	2.7	4,380
64	0.5 mi. south of Noelville, southerly 1.6 mi.	1.6	1.6	3,000
124	Hwy. 11 westerly	1.0	1.0	1,240
522	14 mi. west of Trout Creek, westerly	4.2	4.2	5,080
534	Powassan westerly and Christian Valley	3.0	3.0	4,500
535	Hagar southerly	1.4	1.4	2,590
	TOTALS	13.9	13.9	20,790

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
64	Field northerly	15.9	48,869	1,920
524	Sec. Hwy. 522 to Hwy. 534	2.9	6,579	247
534	2 mi. west of Powassan to Restoule	21.4	66,715	1,756
539	Field to River Valley	10.0	30,540	1,185
635	Hwy. 17 to Quebec boundary	1.5	5,500	216
	Noelville vicinity	1.6	4,225	396
	TOTALS	53.3	162,428	5,720

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
11	North Bay northerly	10.0	18,488
17 T.C.	1.5 mi. west of Bonfield Corners for 0.5 mi.	0.5	818
17 T.C.	North Bay westerly	.....	1,508
	TOTALS	10.5	20,814

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
11	Temagami, various locations	3.0	7,338	538
522	Commanda westerly, various locations	6.0	16,473	726
535	St. Charles, northerly	6.0	16,600	1,026
630	Hwy. 17 southerly	3.5	8,815	420
635	Hwy. 17, Quebec boundary	1.5	4,300	180
	TOTALS	20.0	53,526	2,890

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Tomiko to 21 mi. north of North Bay	1961	1961	Steel girder

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	1 mi. north of Sundridge to 2 mi. north of South River	6.81	98,541
11	2 mi. north of South River to 1 mi. south of Trout Creek	6.43	43,925
11	North Bay limits, 10 mi. north	10.00	20,053
11	Tomiko bridge	0.11	956
17	Petawawa (stockpile)	.....	12,000
17	Deep River to Point Alexander	4.24	55,752
64	Verner to Alban	40.00	26,164
124	Magnetawan (stockpile)	.....	8,000
522	Trout Creek to Jct. Hwy. 524	14.00	8,000
528	Jct. Hwy. 64 to Wolseley Bay	8.50	5,282
535	Veuve River to Noelville, various locations	19.00	9,996
539	Warren to River Valley	16.00	8,000
607	Jct. Hwy. 64 to French River	8.00	3,764
630	Jct. Hwy. 17, 5 mi. south (stockpile)	.....	797
	TOTALS	133.09	301,230

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	4 mi. north of Burks Falls to Latchford	131.0	6,208
17 T.C.	Pembroke to Hagar	181.0	4,135
63	North Bay to Temiskaming	40.0	890
64	Rutter to Martin River	85.0	16,452
94	Callander, to Hwy. 17	6.0	49
123	Hwy. 11 to airport	5.2	213
124, 510	Hwy. 11 to Magnetawan	15.0	295
522	Trout Creek to Loring	38.0	2,559
528	Hwy. 53 to Wolseley Bay	11.0	1,261
533	Mattawa to Hwy. 63	34.0	3,674
534	Powassan to Restoule	23.0	10,254
535	Veuve River to Noelville	31.0	10,588
539	Warren to Field	26.0	828
607	French River to Hwy. 64	8.0	375
630	Kiosk to Hwy. 17	19.0	210
635	Rolphston to Quebec boundary	1.5	255
	TOTALS	654.7	58,246

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
11	1 mi. north of Sundridge to 2 mi. north of South River	6.81	1961	....	6.81
11	2 mi. north of South River to 1 mi. south of Trout Creek	6.43	1961	....	3.00
17 T.C.	Deep River to Point Alexander	4.24	1960	....	4.24
17 T.C.	Bissetts Creek	1.68	1961	....	....
64	Noelville westerly	6.50	1960	1.5	5.00
522	Trout Creek westerly	1.00	1962	....	0.50
534	Nipissing westerly	1.17	1961	....	1.17
534	Jct. Hwy. 524, 1 mi. west	1.00	1961	....	1.00
535	Hagar southerly	3.60	1961	....	3.60
	TOTALS	32.43		1.5	25.32

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
11	1 mi. north of Sundridge to 2 mi. north of South River	6.81	1961	.....	6.81	98,541
11	2 mi. north of South River to 1 mi. south of Trout Creek	6.43	1961	.....	3.00	43,925
11	Birches Road, passing lane only.	0.25	1961	.....	0.25	3,650
17 T.C.	Deep River to Point Alexander.	4.24	1960	.....	4.24	55,752
64	Lavigne causeway	0.25	1961	.....	0.25	8,068
64	Noelville westerly	7.00	1960	.....	5.00	130,441
124	Hwy. 11, 3 mi. west	1.75	1959	1.00	0.75	54,713
522	Trout Creek westerly	1.00	1962	.....	0.50	16,074
534	Nipissing westerly	1.17	1961	.....	1.17	66,714
534	Jct. Hwy. 24, 1 mi. west	1.00	1961	.....	1.00	38,577
535	Hagar southerly	3.60	1961	.....	3.60	51,895
	TOTALS	33.50		1.00	26.57	568,350

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
63	Little Jocko River north easterly	2.70	1962	.....	2.70	34,012
533	7 mi. north of Mattawa, 11.1 mi. north	4.10	1962	.....	4.10	14,668
534	Christian Valley	1.00	1960	0.75	0.25	1,680
535	St. Charles southerly	3.00	1962	.....	3.00	49,837
630	Eau Claire southerly	3.80	1961	.....	3.80	29,863
	TOTALS	14.60		0.75	13.85	130,060

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	7	gals. 214.5	.....
Calcium dust layer on gravel roads	.....	829.63	215.8
Calcium for de-icing roads	.....	5.0	20.0
Off-road parks maintained	12	.....	.....
Roads snowploughed and kept open, King's Highways	7	.....	479
Roads snowploughed and kept open, Secondary Highways	12	.....	202
Roadside picnic places maintained	22	.....	.....
Routine maintenance, King's Highways	.....	.....	479
Routine maintenance, Secondary Highways	.....	.....	202
Salt for de-icing roads (raw)	.....	6,865.6	525
Salt in sand, stockpiled	.....	1,528.0	.....
Sand for winter maintenance	.....	66,825	.....
Scale houses maintained	3	.....	.....
Seeding by department's forces (sq. yds.)	256,520	.....	.....
Signs erected or replaced	5,185	.....	.....
Snow fence erected, dismantled, stored	.....	.....	49.7
Traffic lights installed this year	1	.....	.....
Weed control	.....	.....	622
Zone painting on King's Highways (gals.)	8,790	.....	590.6
Zone painting on Secondary Highways (gals.)	303	.....	14.3

DISTRICT No. 14—NEW LISKEARD

R. S. CHAPMAN, P.Eng., District Engineer

Construction

The Earlton By-pass which includes the prestressed concrete structure over the Ontario Northland Railway was completed and opened to traffic.

Paving was carried out on Highway 11 between Earlton and Englehart, including the Earlton By-pass, base course only.

Construction of the Tri-town By-pass began in July 1961, from Gillies limits to the Haileybury West Road, and these six miles will be completely graded by June 1962.

Work on the grading of Larder Lake easterly, Highway 66, 6.29 miles, began in October 1961 and rock excavation was carried out throughout the winter of 1961–62.

Black River bridge on Highway 101 at Matheson was completed and opened to traffic. Sub-excavation, granular backfill and paving was completed on Fourth and Fifth Avenues, Railway and Second Streets in the town of Matheson.

On Secondary Highway 577, a creosoted timber structure, on creosoted timber piles, 276 feet in length and 37 feet wide, was completed by our bridge crew during the winter of 1961–62.

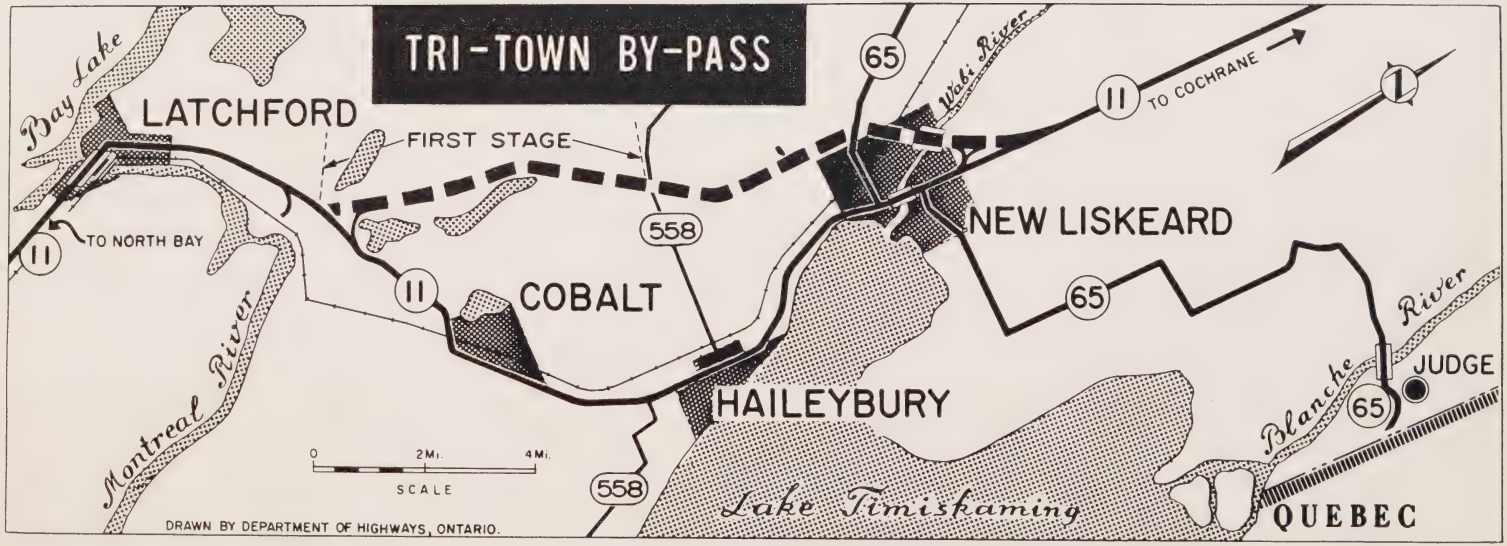
Maintenance

Spring break-up was normal with little excessive frost damage to roads. Normal maintenance operations progressed as usual, such as surface treating of paved roads, zone painting, and the use of calcium chloride on gravel roads. Again this year the calcium chloride was applied as a brine as this method has proven very satisfactory. Mulch surface was constructed on 21 miles of gravel road; numerous rains in the summer caused several delays in this program. Seven steel bridges were completely painted.

The fall season was moderately wet. Snowfalls began earlier than usual, in late October, and the general use of salt for de-icing began in mid-November. A generally heavier than average snowfall for the winter, usually coming in small snowfalls, caused an unusually high consumption of salt. The winter was colder than average but with an almost complete lack of wind and thus there was little drifting.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
11	Earlton south limits to Englehart	9.9	1961	4.95	17,080
11, 101	Town of Matheson	1.73	1961	1.73	4,883
	TOTALS	11.63		6.68	21,963


TRI-TOWN BY-PASS
LATCHFORD
Bay Lake
FIRST STAGE
TO NORTH BAY
11
COBALT
Montreal River
558
65
Wabi River
11
TO COCHRANE
1
NEW LISKEARD
65
HAILEYBURY
Blanche River
JUDGE
65
558
0 2Mi. 4Mi.
SCALE
Lake Timiskaming
QUEBEC
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
65	Quebec boundary, 1.1 mi. west	1.1	1.1	1,700
66	From Hwy. 11 west	5.5	5.5	8,400
101	Twin Lakes to Ghost River	5.0	5.0	7,500
101	Revision at 2.5 to 4.5 mi. west of Timmins	2.0	2.0	3,000
101	From 30 to 35 mi. west of Timmins	5.15	5.15	7,800
Twp.	Radar station road east from Hwy. 11 at Ramore in Twp. of Playfair	1.9	1.9	1,400
	James Twp.	0.4	0.4	600
	TOTALS	21.05	21.05	30,400

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
	Dalton Road, Mountjoy Twp.	4.5	18,000	———

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
65	New Liskeard westerly	3.4	5,000
101	Timmins westerly	4.5	6,500
	TOTALS	7.9	11,500

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
65	Quebec boundary westerly	10	32,100	14,100
	Elk Lake easterly	22	62,100	2,355
572	Hwy. 11 easterly to end	5	16,300	600
	TOTALS	37	110,500	17,055

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Ontario Northland Railway bridge at Earlton	1960	1961	Pre-stressed concrete
65	Moose Creek bridge	1961	.....	Structural steel and reinforced concrete
101	Black River bridge east of Matheson	1960	1961	Structural steel and reinforced concrete
101	Cripple Creek bridge	1962	.....	Timber piles, structural steel, creosoted timber
101	Shawmere River bridge	1961	1961	Glu Lam. beams and creosoted timber
577	Driftwood River bridge at Shillington	1960	1961	Concrete deck on timber piles

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	Between Hwy. 11 and Black River	.....	10,000
11, 65	3 mi. south of Cobalt and 3 mi. east of Hwy. 11	.....	8,000
11	Earlton south limits to Englehart	9.9	78,605
11, 101	Black River bridge to Matheson	.....	3,922
11, 570	Intersection of Sec. Hwy. and Hwy. 11	.....	8,000
65	Wright Creek and Blanche River bridge	.....	2,586
65	3 mi. west of New Liskeard	.....	15,000
101	Matheson to Timmins	.....	10,014
101	Quebec boundary westerly	8	16,000
101	Eastman's Creek	.....	10,000
101	5 mi. west of Timmins	.....	12,000
560	Charlton to Tamarac Creek	.....	15,000
571,562	Hwy. 11 to Hwy. 65 and Earlton south	.....	16,000
571,562	Earlton south to Thornloe	.....	14,000
566	Matachewan westerly	.....	16,000
576	Kamascotia Road	10	12,000
577	Hwy. 11 to Ansonville	.....	9,500
	TOTALS	27.9	254,041

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
65	At 3 mi. west of New Liskeard	0.2	300
66	5 mi. to 12 mi. west of Hwy. 11	7	1,900
101	Temiskaming-Sudbury boundary to Foleyet	34	6,200
	24 mi. to 29 mi. east of Matheson	5	7,100
558	Throughout	20	3,500
560	Charlton to Tamarac Creek	10	2,700
	Tamarac Creek to Temiskaming-Sudbury boundary	57	7,300
	Temiskaming-Sudbury boundary to Jct. Hwy. 560A	31	1,600
562	Jct. Hwy. 571 easterly to Thornloe	3	1,500
566	2 mi. to 8 mi. west of Matachewan	6	300
567	Throughout	20	2,500
569	Throughout	18	2,000
570	Throughout	2.50	1,300
571	Jct. Hwy. 562 northerly	2.50	1,100
577	Throughout	15	5,700
624	Hwy. 66 southerly	23	3,300
	TOTALS	254.20	48,300

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous 1961–62	Miles Compl. 1961–62
11	Earlton to Englehart	9.9	1961	.....	9.9
11	Gillies limits to Sec. Hwy. 558 (Tri-town By-pass)	6.19	1961	.....	4.7
11, 101	Black River bridge, Matheson	1.73	1960	1.30	.43
65	Wright Creek and Blanche River at Judge	1.00	1960	.83	.17
65	Moose Creek bridge	.70	1961	.....	.....
66	Larder Lake easterly	6.29	1961	.....	.63
Res. Rd.	Foleyet to Chapleau, day labour clearing and equipment rental grading	34	1959	20	14
	TOTALS	59.81		22.13	29.83



Construction of Foleyet-Chapleau Resources Road (New Liskeard District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
101	Black River bridge at Matheson.	1.73	1960	1.30	.43	7,411
11	Earlton to Englehart	99	1961	.....	9.9	196,067
	TOTALS	11.63		1.30	10.33	203,478

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
65	At 3 mi. west of New Liskeard	0.2	1961	0.2	16,300
66	Hwy. 11 westerly	12	1961	12	11,000
101	Temiskaming-Sudbury boundary to Storm's Creek	9	1961	9	55,000
	Timmins westerly	4	1961	4	18,000
	29 mi. to 39 mi. east of Matheson	10	1961	10	9,400
558	Throughout	16	1961	16	2,000
560	Charlton to Tamarac Creek	10	1961	10	15,000
	15 mi. to 16 mi. west of Elk Lake	1	1961	1	51,500
	27 mi. to 28 mi. west of Elk Lake	1	1961	1	61,500
	Temiskaming-Sudbury boundary to Gogama	70	1961	70	10,200
	Various locations	.....	.....	.....	4,000
562	Jct. Hwy. 571 east	3	1961	3	5,200
566	2 mi. west of Matachewan	14	1961	14	9,000
567	Throughout various locations	.....	.....	.....	1,400
569	Hwy. 11 easterly	3	1961	3	5,500
570	Throughout various locations	.....	.....	.....	200
577	Sec. Hwy. 626 (Monteith) to Ansonville	9	1961	8	5,200
624	Hwy. 66 southerly	20	1961	20	17,500
	TOTALS	182.20		181.20	297,900

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
11	Butler Building, Englehart district stockyard	Stock	1961	1961
67	Porquis patrol yard, 300-ton capacity standard shed	Salt storage	1961	1961
101	Foleyet patrol yard, Butler Building	Delco plant	1961	1961
560	Shiningtree patrol yard	Delco plant	1961	1961
101	Foleyet patrol yard, four-bay metal garage	Patrol garage	1961	.....

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	7	.....	.....
Calcium dust layer on gravel roads	.....	486	164
Development roads built	5	.....	14
Off-road parks maintained	7	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	477
Roads snowploughed and kept open, Secondary Highways	.....	.....	348
Roadside picnic places maintained	12	.....	.....
Routine maintenance, King's Highways	.....	.....	477
Routine maintenance, Secondary Highways	.....	.....	356
Salt for de-icing roads (raw)	.....	7,120	418
Salt in sand, stockpiled	.....	1,230	.....
Sand for winter maintenance	.....	17,950	400
Scale houses maintained	1	.....	.....
Seeding by department's forces (sq. yds.)	290,000	.....	.....
Signs erected or replaced	2,195	.....	.....
Snow fence erected, dismantled, stored	.....	.....	97
Weed control (gals.)	565	.....	551
Zone painting on King's Highways (gals.)	5,990	.....	357
Zone painting on Secondary Highways (gals.)	940	.....	47

DISTRICT No. 16—COCHRANE

E. H. JONES, P.Eng., District Engineer

Construction

The grading and granular base under contract between Kapuskasing and Hearst was completed and the Department of Highways' asphalt plant laid base course hot mix pavement from five miles west of Opasatika to Hearst and also completed the shouldering to the present grade.

The grading and granular base contract, with structure on the Wicklow River, from 10 to 20 miles south of Cochrane on a new alignment was opened to traffic in the fall although incomplete. Additional grading and granular base contracts were awarded on Highway 11 from Porquis Junction northerly and on Highway 67 from Porquis Junction to Ansonville, but only winter work has been performed to date.

The Missinaibi River bridge at Mattice on Highway 11 was officially opened by the former Minister of Highways, The Honourable Fred M. Cass, Q.C., on October 16, 1961.

The destruction by ice of the Mattawishkwia River bridge on Secondary Highway 583 at Hearst has necessitated a new structure to be built under contract which will be awarded before the end of this fiscal year.

Maintenance

A new section of secondary highway was assumed by the district in September and is known as Secondary Highway 636. Extensive grading by district maintenance forces was carried out in order that it be raised to our secondary highway standards. Considerable seeding and mulching was carried out with approximately 300 acres of new construction areas seeded. A special fibre mesh to control erosion was introduced. Approximately 10,000 square yards were put down, giving good results.

A new axle loading scale was installed and completed with the exception of paving the area. The scale was officially opened on November 21, 1961. Illumination of the weigh scale area and the adjacent intersection was completed with 19 concrete light standards.

Heavy ice-flows damaged the Mattawishkwia River bridge on Secondary Highway 583, taking out the centre span. A Bailey bridge was erected by district forces replacing the bridge in record time.

Winter arrived a little earlier than usual with an abundance of snow, but no snow clearing problems were experienced.

Various winter works projects were undertaken with lake areas cleared adjacent to Highway 11 to enhance the view.

An extensive grading project was carried out on Secondary Highway 583 north. A total of 120,000 tons pit run gravel and 10,000 tons $\frac{5}{8}$-inch crushed gravel were placed.

A new sand screening plant was received and should prove useful to the district.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
11	Lowther to Hearst (base only)	30	July	28	53,100
11	Opasatika to 5 mi. west (top only)	5	.....	5	16,086
11	Town of Hearst	2	.....	2	3,400
	Hearst Department of Highways' yard (base only)	....	.....	....	723
11	Forde, Valentine and Skunk Rivers bridges	....	.....	....	420
	Town of Hearst (Municipal)	....	.....	....	2,000
	TOTALS	37		35	57,729

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
11	10 to 20 mi. west of Hearst	10	11,850

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
11	Hearst westerly 10 mi. and from 20 to 40 mi. west of Hearst	30	73,934	1,381

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Missinaibi River bridge at Mattice	1959	1961	.....
11B	Wicklow River bridge (5 mi. south of Cochrane)	1961	1961	.....
11	Wicklow River bridge (14 mi. south of Cochrane)	1960	1961	Bailey

Lac Ste. Therese, bridge replaced by multi-plate culvert.
Kapuskasing, bridge replaced by multi-plate culvert.

NOTE:

Missinaibi River Bridge—Hwy. 11

Concrete deck on continuous truss, steel girder approach spans. 2 spans at 100 feet, 2 spans at 125 feet, 3 spans at 150 feet. Overall length 952 feet abutment to abutment. Roadway width 28 feet with 1 sidewalk.

Wicklow Bridge—Hwy. 11—11 to 14 miles south of Cochrane.

Concrete deck on steel substructure. 2 spans at 40 feet, 1 span at 60 feet. Overall length 162 feet abutment to abutment. Roadway width 28 feet. No sidewalks.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	Missinaibi River bridge at Mattice	....	55.00
11	Hearst easterly	6	21,000.00
11	10 to 20 mi. south of Cochrane	10	75,000.00
11	Stockpiled 5 mi. north of Porquis Junction	....	6,142.60
583	Hearst to Meade	18	10,004.00
578	Hwy. 11 to Iroquois Falls	....	2,933.82
578	Stockpiled		5,933.63
	TOTALS	34	121,069.05

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
11	Cochrane to Porquis Junction	32.8	6,326
11	Cochrane to Smooth Rock Falls	40.0	9
11	Smooth Rock Falls to Kapuskasing	40.0	589
11	Kapuskasing to Mattice	40.0	1,420
11	Mattice to Hearst	20.0	848
11	Hearst to Longlac	134.9	16,245
Secondary Highways			
574	Cochrane to Norembega	18.0	9,871
578	Herman Lake to Montrock	6.0	1,869
579	Cochrane to Gardiner	18.0	13,121
581	Moonbeam to Remi Lake	3.5	1,508
583	Lake Ste. Therese to Meade	40.18	14,659
625	Jct. Hwys. 11 and 625 to Caramat	20.0	17,956
631	Jct. Hwys. 11 and 631 to Hornepayne	46.0	392
636	Jct. Hwys. 11 and 636 to Frederickhouse	3.0	2,925
	TOTALS	462.38	87,738

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62
11	10 to 20 mi. south of Cochrane	10	1961	10
11	20 mi. south of Cochrane to Porquis Junction	10	1962	1
67	Porquis Junction easterly	9.3	1961	3
	TOTALS	29.3		14



Missinaibi River Bridge on Highway 11 at Mattice (Cochrane District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
11	10 to 20 mi. south of Cochrane	9.58	1961	.....	9.58	337,555
11	Hearst easterly, shouldering and grade preparation for pave	8.32	1960	8.32	.....	21,068
	TOTALS	17.90		8.32	9.58	358,623

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
574	Cochrane to Norembega	18	Oct. 27/61	18	28,350
579	Cochrane to Gardiner	20	Nov. 16/61	20	25,200
583	Meade to Hearst to Lac Ste. Therese	30	Oct. 28/61	30	135,000
625	Jct. Hwys. 11 and 625 to Caramat	7	Dec. 1/62	7	10,500
631	Jct. Hwys. 11 and 631 to Hornepayne	10	Mar. 9/62	10	15,000
636	Jct. Hwys. 11 and 636 to Frederickhouse	3	Oct. 27/61	3	15,000
	TOTALS	88		88	229,050

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
11	South of intersection of First Street and Third Avenue, Cochrane	Scale house	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	5	gals. 552	.....
Calcium dust layer on gravel roads	.....	618	.....
Roads snowploughed and kept open, King's Highways	3	.....	320.50
Roads snowploughed and kept open, Secondary Highways	8	.....	148.21
Roadside picnic places maintained	17	.....	.....
Routine maintenance, King's Highways	.....	.....	320.50
Routine maintenance, Secondary Highways	.....	.....	148.21
Salt for de-icing roads (raw)	.....	2,579.07	311.95
Salt in sand, stockpiled	.....	500	.....
Sand for winter maintenance	.....	7,102	.....
Scale houses maintained	2	.....	.....
Seeding by department's forces (acres)	298	.....	.....
Signs erected or replaced	1,639	.....	.....
Snow fence erected, dismantled, stored	.....	.....	16
Weed control (gals.)	756	.....	119
Zone painting on King's Highways (gals.)	3,141	.....	303.6
Zone painting on Secondary Highways (gals.)	35	.....	3

DISTRICT No. 17—SUDBURY

T. A. SHARPE, P.Eng., District Engineer

Construction

The 1961–62 construction season in Sudbury district saw the paving of several sections of highway that had been graded in previous years.

One of these was on Highway 68 from the intersection of Highway 17 to 10.5 miles south of Espanola. This contract included sub-excavation and paving to four-lane standards through the town of Espanola and greatly improves the driving conditions toward Manitoulin Island.

In addition, another 2.8 miles of heavy grading has begun immediately south of this new pavement which will extend to Whitefish Falls.

A completely new diversion, 13 miles long from Pointe-au-Baril to Magnetawan Bay, was paved in 1961, thus completing the final step in bringing Highway 69 up to Trans-Canada standards in the Sudbury district.

Much work is being done around the city of Sudbury to provide for increasing traffic. One of these contracts extends from the old city limits on Highway 69 north for 3.8 miles. The first mile of this new highway will be four lanes, the remainder, two. Approximately one mile of grading on this contract has been completed.

Immediately north of this section, another grading contract to Val Caron has been completed except for top course paving and trimming.

On the east limits of Sudbury, on Highway 17, the paving was completed on 0.87 miles of grading built the previous year from 0.4 miles east of Falconbridge Road to 0.2 miles west of Barrydowne Avenue. A portion of this contract is four-lane divided highway. On the west boundary of the city, 1.14 miles of four-lane divided highway was completed fronting Copper Cliff. Under the same contract, 0.59 miles of channelization was finished at the intersection of Highway 17 and Secondary Highway 536 leading to Creighton Mine.

The majority of construction on secondary highways was done on the Killarney-Burwash Road which was numbered Secondary Highway 637 during the year. On November 1, 1961, the road was opened to traffic with completion of the contracts from Wanapitei River to Tyson Channel. However, further construction is still in progress from Killarney easterly 7.0 miles and a contract has just begun for placing crushed gravel throughout the entire length from Killarney to Burwash.

The Whitson Creek bridge on Secondary Highway 544, 1 mile west of Chelmsford, was opened to traffic in 1961. Also, at Massey, a new bridge is under construction over the Spanish River on Development Road 498 which is approximately 75 per cent complete.

Work was partially completed on the grading and paving contract for the district yard and offices.

Maintenance

Highway mileage in Sudbury district was increased this year following the opening of Highway 69 between Pointe-au-Baril and the Magnetawan River and the opening of the Killarney Road (Secondary Highway 637). In addition, the district is now responsible for maintaining Secondary Highway 634 between Chelmsford and Val Caron. Approximately 70 miles were thus added to the district.

Both methods used last year to treat slippery pavement proved successful and the program was continued this year. Dix-Seal was laid over approximately 0.5 miles of four-lane pavement on Highway 17 west of Sudbury, and the De-slicker was used to burn excess asphalt on Highway 17 in the vicinity of Whitefish and Copper Cliff and on Highway 69 in the vicinity of Hanmer. Results using Dix-Seal were excellent. The De-slicker too gave a much improved pavement surface although it may be necessary to repeat the initial burning operation after two or three years to obtain best results.

Four "flat" curves on Highway 17 between Nairn and Webbwood were padded to provide correct superelevation. Accidents at these locations should be reduced as a result.

A program of shoulder stabilization was initiated this year in the vicinity of McKerrow on Highway 17, Estaire on Highway 69, and Azilda on Secondary Highway 544. The operation involved the addition of a clay binder to the existing shoulder material. A more satisfactory shoulder was produced following mixing, watering and rolling. The program will be continued next year.

The district bridge crew continued to be busy and in addition to normal bridge maintenance, four Bailey bridges were replaced on Secondary Highway 553

Following completion of construction contracts, lighting was installed west of Sudbury at the intersections of Highway 17 with Balsam Street and Power Street. Lighting was also installed at the intersections of Highway 17 with Highway 68 and Secondary Highway 536. This work was carried out by the Huntsville district electrical crew.

A new patrol yard was developed at Whitefish and minor development was carried out at the new yard at Tehkummah. Salt sheds were constructed at the patrol yards at Whitefish, Gore Bay and Mindemoya.

Winter work this year was concentrated on brushing, and crews were employed on Secondary Highways 555, 557, 553, 549 and 537. Under the winter work program a start was made to developing four picnic sites, two being located on the Killarney Road and the others at the Naiscoot River on Highway 69 and the Spanish River on Highway 17.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
68	C.P.R.	North of Little Current	2 flash. lights, 1 wigw. and bell
68	C.P.R.	North of Espanola (McKerrow)	2 flash. lights, 1 wigw. and bell
541	C.N.R.	South of Garson	2 flash. lights, 1 wigw. and bell
545	C.N.R.	Hanmer	2 flash. lights, 1 wigw. and bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
17	0.4 mi. east of Falconbridge Road to 0.2 mi. west of Barrydowne Road	0.87	1960	0.87	8,447.38
17	"A" Balsam Street West to Power Street	1.14	1961	1.14	8,721.50
17	"B" intersection Hwy. 17 and Sec. Hwy. 536	0.59	1961	0.59	1,884.58
17 T.C.	"A" intersection Hwys. 17 and 68	0.22	1961	0.22	1,073.19
68	"B" Hwy. 17 to 10.5 mi. south of Espanola	11.43	1961	11.43	30,110.66
69 T.C.	Pointe-au-Baril to Magnetawan Bay	12.99	1960	12.99	47,615.22
69	3.2 mi. north of Sudbury to Val Caron	4.06	1961	3.1	10,462.19
69	District yard	.....	1961	Base course only	1,990.56
	TOTALS	31.30		27.55	110,305.28

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
68	Ten Mile Point to South Baymouth	33	95,994.40	2,660.20
526	Hwy. 69 to Britt	2.3	6,690.20	185.40
529	Bayfield turn to Magnetawan River	12.8	59,903.00	1,895.40
545	Capreol to Milnet	10.0	29,089.60	806.50
549	Hwy. 17 to Lake Penage	9.2	26,762.10	741.70
551	Mindemoya to Excelsior	7.8	22,689.60	628.80
	TOTALS	75.10	241,128.90	6,917.80

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
17 T.C.	17 mi. east of Hwy. 68 to 1 mi. west of Hwy. 68 — 4 curves	.....	2,041.90
17	Markstay to Hagar, patching	.....	1,698.33
17	Vicinity of Sudbury	.....	462.90
69, 544	Vicinity of Sudbury, patching	.....	1,406.79
	TOTALS		5,609.92

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Chips Used 1961–62
68	Little Current to Birch Island	10.66	23,100	.....
68	Manitowaning diversion	0.36	1,100	40.90
69	Town of Capreol	1.2	3,575	160.41
540	Little Current westerly 5 mi.	5.34	16,950	688.30
541	Between Jct. Hwys. 545 and 541 to Garson	1.75	4,925	231.45
544	Chelmsford turn to Azilda	0.35	1,025	53.00
545	Jct. Hwys. 69 and 545 to Jct. Hwys. 545 and 541	0.98	2,900	132.90
	TOTALS	20.64	53,575	1,306.96

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
544	Whitson Creek, 12 mi. northwest of Sudbury	1961	1961	Prestressed beams and reinforced concrete
606	Vermilion to Balfour Twp.	1961	1962	Steel beam concrete deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17	"A" intersection Hwys. 17 and 68	.22	1,994.18
17	Contract 60-271 "A" and "B". "A" Balsam Street west to Power Street, 1.14 mi.	1.14	20,173.13
17	"B" intersection Hwy. 17 and Sec. Hwy. 536	0.59	3,997.34
17	0.4 mi. east of Sec. Hwy. 541 to 0.2 mi. west of Barrydowne Road.	0.87	7,014.17
17	17 mi. east of Hwy. 68 to 1 mi. west of Hwy. 68	.....	8,823.96
17	Markstay to Hagar, granular pads and hot mix patching	.....	1,909.86
17, 108	Massey and Elliot Lake	.....	14,998.57
68	From Hwy. 17 to 10.5 mi. south of Espanola	11.43	40,646.50
68	Vicinity of Manitowaning	.....	14,995.85
69	3.2 mi. north of Sudbury to Val Caron	4.06	57,766.00
69	District yard parking area and access road	.....	2,885.14
69	North limits of Sudbury northerly 3.8 mi.	3.8	16,298.88
69 T.C.	Pointe-au-Baril to Magnetawan Bay	12.99	86,188.43
69, 544	Vicinity of Sudbury	.....	1,159.93
Development Roads			
498	Spanish River bridge at Massey	0.58	3,273.00
537	From Wanup to Wanapitei	.....	14,998.00
540	Gore Bay west	.....	14,997.96
542, 551	Vicinity of Mindemoya	.....	19,993.58
544	Whitson Creek bridge 12 mi. northwest of Sudbury	.20	2,206.10
	TOTALS	35.88	334,320.57

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17 T.C.	From Hagar to Blind River	14.7	18,460
Old 17	Whitefish to Nairn	1.5	3,249
68	Hwy. 17 to South Baymouth	80.9	12,572
69C	Capreol to Pointe-au-Baril station	98.9	20,771
108	Hwy. 17 to Quirke Lake	27	592
537	Hwy. 69 to Wanapitei	13	3,871
540	Little Current to Meldrum Bay	89	4,509
541	Hwy. 17 to Wanapitei Lake	17	358
542	Tehkummah to Jct. Sec. Hwy. 540	48	5,617
543	Hwy. 69 to Long Lake	5	45
544	Sudbury to Geneva Lake Mine	61	3,376
545	Bailey's Corners to Hanmer, Capreol to Milnet	18	8,938
549	Hwy. 17 to Lake Penage	9	633
551	West Bay to Mindemoya and Sec. Hwy. 542 to Providence Bay	11	1,781
553	Massey northerly	43	274
555	Hwy. 557 to Lake of the Mountains	5	1,932
557	Blind River to Lake Matinenda	14	767
	TOTALS	688.3	87,745

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
17	0.14 mi. east of Falconbridge Road to 0.2 mi. west of Barrydowne	0.87	1960	0.78	0.09
17	"A" Balsam Street west to Power Street 1.14 mi., "B" intersection Hwy. 17 and Sec. Hwy. 536, 0.39 mi.	1.53	1961	.....	1.53
17 T.C	Part "A" intersection Hwys. 17 T.C.H. and 68	0.22	1961	.....	0.22
68	Part "B" intersection Hwys. 17 and 68 to 10.5 mi. south of Espanola	1.82	1961	.....	1.82
69	North limits of Sudbury northerly for 3.8 mi.	3.8	1961	.....	1.00
69	3.2 mi. north of Sudbury to Val Caron	4.06	1961	.....	4.06
498	Spanish River bridge at Massey	.58	1961	.....	.56
544	Whitson Creek bridge 12 mi. northwest of Sudbury	.02	1961	.....	.02
544	Cartier turn, westerly	2.0	1960	1.0	1.0
637	Tyson channel, easterly	4.0	1960	2.0	2.0
	TOTALS	13.50		3.78	12.30

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
17	0.14 mi. east of Falconbridge Road to 0.2 mi. west of Barrydowne Avenue	0.87	1960	0.78	.09	24,568.00
17	"A" Balsam Street west to Power Street 1.14 mi., "B" intersection Hwy. 17 and Sec. Hwy. 536, 0.59 mi.	1.73	1961	.....	1.73	94,600.21
17, 68	"A" intersection Hwys. 17 and 68, "B" Hwy. 17 to 10.5 mi. south of Espanola	11.65	1961	.....	11.65	28,004.82
69	Pointe-au-Baril to Magnetawan Bay	12.99	1961	.....	12.99	291,322.19
69	North limits of Sudbury, northerly 3.8 mi.	3.8	1961	.....	1.00	113,295.50
69	3.2 mi. north of Sudbury to Val Caron	4.06	1960	.....	4.06	167,734.86
544	Whitson Creek bridge 12 mi. northwest of Sudbury	0.2	1961	.....	.02	17,271.80
544	Cartier turn, westerly	2.0	1960	1.0	2.0	6,000.00
498	Spanish Riv. bridge at Massey.	0.58	1961	.....	0.56	19,083.00
637	Wanapitei River southwest for 4 mi.	4.0	1961	.....	4.0	42,132.76
	TOTALS	41.70		1.78	38.10	804,013.14

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Year Begun	Miles Compl. 1961–62	Tons Placed 1961–62
537	Vicinity of Wanup	1.2	1961	1.2	3,293



Highway 68—3 miles north of Whitefish Falls (Sudbury District).

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
17	T.C. Whitefish	Salt shed	1961	1961
540	Gore Bay	Salt shed	1961	1961
542	Mindemoya	Salt shed	1961	1961

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	4		
Calcium dust layer on gravel roads		1,325	225
Off-road parks maintained	16		
Roads snowploughed and kept open, King's Highways			334
Roads snowploughed and kept open, Secondary Highways			430
Roadside picnic places maintained	13		
Routine maintenance, King's Highways			334
Routine maintenance, Secondary Highways			491
Salt for de-icing roads (raw)		7,985	407
Salt in sand, stockpiled		1,429	
Sand for winter maintenance		36,234	
Scale houses maintained	1		
Seeding by department's forces (sq. yds.)	116,200		
Shrubs received and planted this year	408		
Signs erected or replaced	4,284		
Snow fence erected, dismantled, stored			82.5
Weed control			52.0
Zone painting on King's Highways (gals.)	5,406		277.1
Zone painting on Secondary Highways (gals.)	1,862		114.3

DISTRICT No. 18—SAULT STE. MARIE

D. P. COLLINS, P.Eng., District Engineer

Construction

Some 10 miles of grading, granular base and hot mix paving was completed on Highway 17 east and west of Blind River.

Grading, granular base, and hot mix paving was completed on Highway 17 from Echo Bay easterly for 9.66 miles.

Paving was completed on 23.88 miles of Highway 17, Trans-Canada, north of Sault Ste. Marie.

Grading and granular base was completed for 8.14 miles on Secondary Highways 550 and 565, Sault Ste. Marie to Pointe Aux Pins.

Grading, culverts and granular base work was started on Highway 17 from Havilland Bay to Chippewa.

Grading, drainage, and granular base operations were also started on a section of Highway 101, west of Chapleau to Big Pine Lake.

A laminated timber structure with a span of 83 feet was completed on Highway 101 at the Nemegosenda River east of Chapleau. Highway 101 between Chapleau and Foleyet was completed to the extent it was used as a winter road.



Trans-Canada Highway 17—20 miles east of Marathon (Sault Ste. Marie District).

Maintenance

District Headquarters moved to the new Ontario Government Building in the fall. Department of Public Works started construction of a new district garage and stockroom at Sault Ste. Marie.

Two new roads were taken over by the district during the year. Highway 101, leading to Foleyet and Timmins from Chapleau, and the Sylvan Valley Road from Echo Bay.

Extensive winter work was carried out to develop picnic sites, mostly between Sault Ste. Marie and White River.

A number of old native timber bridges were replaced by culverts, and various curves and grades were eased on secondary highways and Highway 129.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
17B	A.C.R.	Heyden	Flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	Sault Ste. Marie to Heyden	9.43	1960	9	0.43	35,021.70
17 T.C.	Heyden to Havilland Bay	14.74	1960	14	0.74	19,077.07
17 T.C.	Echo Bay easterly	9.66	1961	....	9.66	34,858.97
17 T.C.	Blind River east and west	10	1960	4	6	31,947.80
	Totals	43.83		27	16.83	120,905.54

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62
552	Hwy. 17B to end	5.1
563	Hwy. 17 westerly	3.5
546	Iron Bridge northerly	5.0
	Total	13.6

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals Bit. Used 1961–62	Tons 5/8" Gravel Used 1961–62
552	Hwy. 17 westerly	5.1	27,000	1,100
563	Hwy. 17 westerly	3.5		
	Totals	8.6	27,000	1,100

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
101	Nemegosenda River, district of Sudbury, Chewett Twp.	1961	1961	Glued laminated timber

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17 T.C.	Echo Bay easterly	9.66	132,806.00
17 T.C.	Sault Ste. Marie to Heyden	9.43	26,819.18
17 T.C.	Blind River east and west	10	65,192.38
17 T.C.	Heyden to Havilland	14.74	13,097.22
17 T.C.	Havilland Bay to Chippewa Falls	9.4	12,256.40
101	Chapleau easterly for 12 mi.	12	24,987.63
101	From approximately 94 mi. west Jct. Hwys. 101 and 129 westerly to Big Pine Lake	12.72	44,047.53
129	From 9 mi. to 19 mi. south of Aubrey Falls Bailey bridge	10	19,952.59
548	Vicinity of Richards Landing, St. Joseph Island	.....	9,979.44
561	From Hwy. 17 northerly	5.5	9,967.09
550, 565	Sault Ste. Marie to Pointe Aux Pins	8.57	72,099.00
	TOTALS	102.02	431,204.46

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17	Blind River to Marathon	336	7,000
101	Chapleau east and west	39	210
129	Thessalon to Chapleau	145	6,986
546	White River Road	50	849
548	St. Joseph Island	36	2,067
550	Gros Cap Road	11	65
552	Goulais Bay Road	5.1	914
554	Parkinson Road	11	297
556	Searchmont Road	23	1,569
561	Dunns Valley Road	20	1,116
563	Batchawana Village Road	3	2,252
614	Manitouwadge Road	38	164
627	Heron Bay Road	5	54
	TOTALS	722.10	23,543

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
17 T.C.	Echo Bay easterly	9.66	1961	....	9.66
17 T.C.	Havilland Bay to Chippewa Falls	9.4	1961	....	2.6
17 T.C.	Blind River east and west	10	1960	3.4	6.6
101	From approximately 94 mi. west Jct. Hwys. 101 and 129 westerly to Big Pine Lake	12.72	1961	....	9.54
550, 565	Sault Ste. Marie to Pointe Aux Pins	8.57	1961	....	8.14
	TOTALS	50.35		3.4	36.54



Trans-Canada Highway 17 at Agawa Bay (Sault Ste. Marie District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	Echo Bay easterly	9.66	1961	....	9.66	137,214.17
17 T.C.	Blind River east and west	10.0	1960	3.4	6.6	25,643.17
101	From approximately 94 mi. west Jct. Hwys. 101 and 129 westerly to Big Pine Lake	12.72	1961	....	9.54	193,575.00
550. 565	Sault Ste. Marie to Pointe Aux Pins	8.57	1961	....	8.14	164,590.00
	TOTALS	40.95		3.4	33.94	521,022.34

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
129	North and south of Aubrey Falls	61.5	1962	10	29,721

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
	Construction started at Sault Ste. Marie on new district garage and stockroom by Department of Public Works	Garage and equip. storage	1961	Not completed

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		161.2	
Development roads built	2		3.0
Off-road parks maintained	5		
Roads snowploughed and kept open, King's Highways			542.3
Roads snowploughed and kept open, Secondary Highways			218.7
Roadside picnic places maintained	26		
Routine maintenance, King's Highways			542.3
Routine maintenance, Secondary Highways			218.7
Salt for de-icing roads (raw)		2,868.3	
Salt in sand, stockpiled		2,096.2	
Sand for winter maintenance		30,002	
Seeding by department's forces (sq. yds.)	646,140		
Signs erected or replaced	2,507		
Traffic lights installed this year	1		
Zone painting on King's Highways			413.1
Zone painting on Secondary Highways			38.0

DISTRICT No. 19—FORT WILLIAM

J. B. GARLAND, P.Eng., District Engineer

Construction

This year the Trans-Canada Highway east of Fort William was practically completed. The only work remaining to be done in this area consists of some five miles of paving from 20 to 25 miles east of Nipigon and the completion of reconstruction of the section from Port Arthur to McKenzie. On this latter section, approximately eight miles of reconstruction was carried out on day labour basis, leaving some three miles to complete next year.

West of Fort William grading was started on the section 10 to 20 miles east of English River. This leaves only two sections of the Trans-Canada Highway west requiring immediate treatment, namely English River easterly (10 miles) and Fort William to Kakebeka Falls (15 miles). These are programmed for next year.

On Highway 61 south, a new international bridge was almost completed, and grading was begun on the new access to the structure.



Trans-Canada Highway 17 at Cavers Hill (Fort William District).

On Highway 11 west, grading on the first 10-mile section of the Atikokan-Fort Frances link was completed and an additional five miles of clearing was done on the next 13.5-mile section.

Overall, some 21 miles of grading work was carried out, together with 19 miles of paving (two courses) and 71 miles of paving (one course). We also opened four structures to traffic, including the Big Pic River bridge, which presented several unique engineering problems.

Maintenance

A total of 3.7 miles of low-cost bituminous pavement was laid by department forces with the moto-paver on Secondary Highway 633, Highway 11 to Kawene.

An additional 3.3 miles of tar mulch was laid on Secondary Highway 580 from Leith Mine to Lake Nipigon, while 44,350 tons of pit run gravel was placed on Secondary Highway 608 — 5.5 miles, and Secondary Highway 595 — 4 miles.

A new patrolman's residence was constructed at Upsala.

Weigh scale site at Nipigon was completed.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
17	C.P.R.	Village of Rossport, Twp. 86	Flash. lights, bell
11	C.N.R.	Village of Beardmore, Twp. of Summers	Flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	Big Pic River bridge	Approaches	1961	Approaches	1,017
17 T.C.	Schreiber, 9.31 mi. west	9.31	1961	9.31	41,013
17 T.C.	Selim diversion to Cavers	15.68	1960	15.68	27,086
17 T.C.	25.0 mi. east of Nipigon, 5.0 mi. east	5.00	1961	5.00	7,257
17 T.C.	10.0 mi. east of Nipigon, 9.78 mi. east	9.78	1961	9.78	29,646
17 T.C.	Nipigon River bridge, 10.4 mi. east	10.40	1960	10.40	15,024
17 T.C.	Loon Lake Road to Ouimet	11.70	1960	11.70	29,831
17 T.C.	Amethyst to Loon Lake Road	8.65	1960	8.65	17,640
17 T.C.	7.5 mi. north of Jct. Hwy. 11 to Poland	19.40	1960	19.40	30,781
	TOTALS	89.92		89.92	199,295

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles in Project	Miles Compl. 1961–62	Tons Placed 1961–62
633	Hwy. 11 to Kawene	3.66	3.66	5,380
580	Leitch Mine to Lake Nipigon	3.3	3.3	4,000
584	Jct. Hwy. 11 to north limit of Geraldton	1.0	1.0	900
	TOTALS	7.96	7.96	10,280

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
11A	8 mi. west of Port Arthur to Jct. Hwy. 17	16.0	20,824	2,041
585	Hwys. 11 and 17 to Pine Portage	23.0	64,714	2,287
588	Sec. Hwy. 590 to 1 mi. west	1.0	3,000	123
588	Hwy. 17 to Sec. Hwy. 595	1.5	2,751	199
589	Hwy. 17A northerly	19.8	25,933	2,044
590	0.5 mi. south of Hwys. 11 and 17 to Sec. Hwy. 588	14.0	52,184	2,270
590	Sec. Hwy. 130 to Hwy. 17	11.0	17,644	1,110
591	Sec. Hwy. 589 to end of Sec. Hwy. 591	5.0	9,178	690
595	Sec. Hwy. 588 to Sec. Hwy. 590	7.6	16,337	784
595	Sec. Hwy. 608 1 mi. northerly	1.0	3,343	108
608	Sec. Hwy. 595 to 0.4 mi. east on Sec. Hwy. 608	0.4	1,200	54
	TOTALS	100.30	217,108	11,710

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1961–62	Tons Placed 1961–62
17 T.C.	Schreiber 3.17 mi. easterly	3.17	4,770
17 T.C.	Nipigon River bridge westerly	10.8	882
	TOTALS	13.97	5,652

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
11	Geraldton Corner to Longlac	35	59,552	3,297.00
130	Port Arthur city limits 2.8 mi. west	2.8	8,199	379.46
	TOTALS	37.8	67,751	3,676.46

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Big Pic River 15.7 mi. north of Hemlo	1961	1961	Reinforced concrete and structural steel
17 T.C.	Gravel River 29.3 mi. south of Jct. Hwy. 11	1959	1961	Reinforced concrete and structural steel
17 T.C.	Little Gravel River 29 mi. south of Jct. Hwy. 11	1959	1961	Reinforced concrete
17 T.C.	Cypress River 24 mi. south of Jct. Hwy. 11	1960	1961	Reinforced concrete and structural steel

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17 T.C.	Big Pic River bridge	Approaches	1,133
17 T.C.	Schreiber to White Sand Lake	5.5	17,364
17 T.C.	Schreiber 9.31 mi. west and 3.17 mi. east	12.48	37,228
17 T.C.	Selim diversion to Cavers	15.68	27,986
17 T.C.	Little Gravel and Gravel River bridges	Approaches	5,505
17 T.C.	20 mi. east of Nipigon to 10.4 mi. easterly	10.4	103,071
17 T.C.	10 mi. east of Nipigon to 9.73 mi. easterly	9.73	51,182
17 T.C.	10 mi. east of Nipigon to 9.78 mi. easterly	9.78	24,515
17 T.C.	Nipigon River bridge to 10.4 mi. easterly	10.4	19,397
17 T.C.	Loon Lake Road to Ouimet	11.7	28,689
17 T.C.	Amethyst station to Loon Lake Road	8.65	9,321
17 T.C.	7.5 mi. north of Jct. Hwy. 11 to Poland	19.5	66,676
17 T.C.	Little Firesteel River to 11.53 mi. westerly	11.53	11,359
11	Atikokan to 10 mi. westerly	10.0	21,245
	TOTALS	135.35	424,671

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17 T.C.	Shabaqua to English River	76.3	19,419
17 T.C.	Marathon to Nipigon	114.0	2,271
11	Longlac to Nipigon	118.5	10,400
11	Nipigon to Atikokan	200.7	6,805
11A (17A)	Port Arthur to Jct. Hwys. 11 and 17	20.7	1,653
61	Fort William to Middle Falls	33.0	1,000
580	Leitch Mine to Lake Nipigon	3.34	3,914
587	Jct. Hwys. 11 and 17 to Silver Islet	25.0	4,546
595	Sec. Hwy. 588 to South Gillies	4.0	3,496
608	Sec. Hwy. 597 to South Gillies	5.5	4,236
633	Jct. Hwy. 11 to 3.66 mi. north (Kawene)	3.66	14,321
	Cavell Road to Jct. Sec. Hwy. 584 to 13.0 mi. west	13.0	16,173
	Miscellaneous locations	60.0	5,996
	TOTALS	677.70	94,230

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
17 T.C.	Schreiber to White Sand Lake	5.50	1959	4.50	1.00
17 T.C.	20 mi. east of Nipigon to 10.4 mi. easterly.	10.40	1960	1.00	9.40
17 T.C.	10 mi. east of Nipigon to 9.73 mi. easterly.	9.73	1959	7.00	2.73
17 T.C.	Little Firesteel River to 11.53 mi. westerly.	11.53	1961	.....	6.00
11	Atikokan to 10 mi. westerly	10.00	1959	9.50	0.50
61	New Pigeon River bridge to 5.71 mi. northerly	5.71	1961	.....	1.00
589	2.4 mi. north of Jct. Hwy. 17A to 3 mi. north	0.6	1961	.....	0.6
588	Jct. Sec. Hwys. 588 and 595 to 0.57 mi. west	0.57	1961	.....	0.15
584	Nakina to 6 mi. south	6.0	1961	.....	6.0
	TOTALS	60.04		22.00	27.38

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	Big Pic River bridge	Approaches	1961	.....	Approaches	750
17 T.C.	Schreiber to White Sand Lake	5.5	1959	5.5	5.5	28,030
17 T.C.	Selim diversion to Cavers	15.68	1960	.....	15.68	456
17 T.C.	Little Gravel and Gravel River bridges	Approaches	1959	.....	Approaches	7,630
17 T.C.	20 mi. east of Nipigon to 10.4 mi. easterly	10.4	1960	1.0	9.4	345,816
17 T.C.	10 mi. east of Nipigon to 9.73 mi. easterly	9.73	1959	7.0	2.73	218,016
17 T.C.	7.5 mi. north of Jct. Hwy. 11 to Poland	19.45	1960	19.45	.....	141
17 T.C.	Little Firesteel River to 11.53 mi. westerly	11.53	1961	.....	6.0	55,012
11	Atikokan to 10 mi. westerly	10.0	1959	7.0	3.0	34,684
61	New Pigeon River bridge to 5.71 mi. northerly	5.71	1961	.....	1.5	24,298
	TOTALS	88.00		39.95	43.81	714,833

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
595	Jct. Sec. Hwy. 588 to South Gillies	4.0	Feb./62	4.0	16,850
608	South Gillies to 5.5 mi. south	5.5	Feb./62	5.5	27,500
	TOTALS	9.5		9.5	44,350

New Buildings

Hwy. No.	Location	Type of Building	Year Begun	Completed
1	Nipigon, 1,000 feet north of Jct. Hwys. 11 and 17 T.C.	Weigh scale	1960	1961
11	Kashabowie, unsurveyed territory	Salt shed	1961	1961
11, 17	Jct. Hwys. 11 and 17, Nipigon, Lt. 14, Con. 1	Salt shed	1961	1961
17 T.C.	Upsala, Lot 5, Con. 3	Patrolman's residence	1961	1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	2	gals. 154	.....
Calcium dust layer on gravel roads	.....	608	114
Calcium for de-icing roads	.....	35	.....
Off-road parks maintained	20	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	580
Roads snowploughed and kept open, Secondary Highways	.....	.....	470
Roadside picnic places maintained	10	.....	.....
Routine maintenance, King's Highways	.....	.....	580
Routine maintenance, Secondary Highways	.....	.....	390
Salt for de-icing roads (raw)	.....	3,131	600
Salt in sand, stockpiled	.....	785	.....
Sand for winter maintenance	.....	16,686	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (sq. yds.)	1,340,680	.....	.....
Signs erected or replaced	4,100	.....	.....
Snow fence erected, dismantled, stored	.....	.....	20.0
Weed control	.....	.....	480
Zone painting on King's Highways (gals.)	5,168	.....	549.1
Zone painting on Secondary Highways (gals.)	285	.....	23.9

DISTRICT No. 20—KENORA

F. B. WHITELEY, P.Eng., District Engineer

Construction

Work continued on Highway 17, Trans-Canada, under five grading, one bridge and two paving contracts. The main difficulty encountered again this year is the settling of rock fills throughout the muskeg sections. This has been especially noted where the fills were made in the winter.

The bridge at Superior Junction was designed for its piers on "H" piles, braced under water by angle bracing, hard-hat divers bolted the bracing and the work was inspected by the Kenora Skin Diving Club using Scuba equipment.

At the Windy Point Narrows bridge these skin divers also inspected the pier footings inside unwatered caissons for cleanliness of overburden over the rock.

On the high-level bridge contract of the causeway, the contractor used his ingenuity in lifting 30-ton prestressed concrete girders off the ice by using two half-yard cranes and "A" frames, supported by two "H" pile sleighrunners. Ice roads were built up to five feet thick to support the roads. Both time and money was saved by this method as against the more conventional method of barging the girders to the site and jacking them into place on the piers 10 to 40 feet above water level.



Laying the deck of Rainy Lake Causeway (Kenora District).

Maintenance

Some major day labour projects carried out by the maintenance section this year included the reconstruction, grading, culverts, ditching and rock crushing on some 25 miles in the Red Lake area, on Highways 105, 125 and 618. Due to a complete lack of granular material in this area, rock piles from the mines were bought and crushed by our own plant.

Other road improvements were carried on, on Highways 119, 128, 596, 603, 605, 613 and 621. These consisted of ditching, grading and granular base to improve grades and alignments.

Repairs and rebuilding of six bridges were carried out, consisting of replacing piles, decks and hand rails. Contracts were let and completed for some 100,000 tons of 5/8-inch gravel throughout the district.

We had the use of the D.H.O. de-slicker for a short time this summer and removed excess asphalt from some 18 miles on Highway 17. Very good results were obtained from our brush spraying operations, covering some 238 miles of highways. About 375 acres of seeding was completed on new contracts.

Again this year a program of signing on secondary highways was carried out to bring these roads up to standard. This year our work was concentrated in the Dryden and Kenora area.

Winter work consisted of clearing and brushing of the right-of-way throughout the district and the brushing out of some 11 scenic points at lakes. Three new picnic sites were established.

The grading and fencing of the new stockyard at Kenora was completed and is now in operation.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	Longbow Corners easterly	8.62	1961	.....	8.62	21,191
17 T.C.	8.7 mi. east of Longbow Corners easterly	9.60	1961	.....	9.60	23,614
17 T.C.	5 mi. west of Hwy. 105 westerly	11.34	1960	5.67	5.67	15,470
	TOTALS	29.56		5.67	23.89	60,275

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1961–62	Gals. Bit. Used 1961–62	Tons Sand Used 1961–62
621	Gameland to Morson	11.5	45,300	1,096

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
105	Perrault Falls	1960	1961	Concrete, box type
11	Rainy Lake causeway	1959	1961	Steel and concrete
11	Approximately 7 mi. east of Fort Frances	1958	1961	Steel and concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
72	Jct. Hwy. 17 to Patricia Corners	37.60	17,763
119	Jct. Hwy. 17 to Richan	13.01	9,341
596	Darlington Bay bridge to Jct. Hwy. 17	18.20	10,000
602	Fort Frances (west limits) to Jct. Hwys. 11 and 71	29.20	14,550
617	Stratton to Jct. Sec. Hwy. 600	14.40	19,992
Resources Road			
	Minaki to Jct. Sec. Hwy. 596	21.50	44,840
	TOTALS	133.91	116,486

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1961–62	Tons Placed 1961–62
17 T.C.	English River to Manitoba-Ontario boundary	222.77	4,783
71	Longbow Corners to Jct. Hwy. 11	96.61	552
105	Jct. Hwy. 17 to Ear Falls	62.60	1,355
	Vermilion Bay		
105	(Hwy. 105) Ear Falls to Red Lake	* 63.55	158,280
125	(Hwy. 125) Jct. Hwy. 105 to Cochenour Dock		
618	(Sec. Hwy. 618) Jct. Hwy. 105 to Starratt Olson Mine		
72	Jct. Hwy. 17 to Sioux Lookout	43.20	2,157
116	Patricia Corners to Hudson	10.06	213
119	Jct. Hwy. 17 to Richan	13.01	189
128	Kenora (north limits) to Redditt	18.60	2,109
Secondary Highways			
594	Dryden (south limits) to Jct. Hwy. 17	22.60	30
596	Darlington Bay bridge to Jct. Hwy. 17	18.20	15
600	Jct. Hwy. 71 to Rainy River	59.00	1,765
601	Jct. Hwy. 17 (east branch) to Jct. Hwy. 17 (west branch)	16.60	442
605	Jct. Hwy. 17 to end of road	7.55	25
609	Jct. Hwy. 105 to Clay Lake	10.10	76
611	Jct. Sec. Hwy. 602 to end of road	12.70	301
613	Big Fork to Lake Despair	25.50	5,046
615	Burditt Lake (Clearwater Lake) to Jct. Hwy. 71	12.50	827
617	Stratton to Jct. Hwy. 600 (north branch)	14.40	478
619	Pinewood to Jct. of Sec. Hwy. 621	25.50	1,582
621	Sleeman to Lake of the Woods	33.40	1,325
	TOTALS	788.45	181,550

* Special project prior to paving.

Grading and Culverts

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62
17 T.C.	Longbow Corners easterly	9.00	1960	6.60	2.40
17 T.C.	9 mi. east of Longbow corners easterly	9.60	1960	6.20	3.40
17 T.C.	19 mi. east of Longbow Corners easterly	11.08	1960	.33	10.67
17 T.C.	Dryden easterly	10.44	1961		.82
17 T.C.	Longbow Corners westerly	5.73	1961		.86
116	Jct. Hwy. 72 to Jct. of Pinetree Radar Base Road	3.12	1961		2.00
11	Rainy Lake Causeway easterly	10.39	1961		2.91
	TOTALS	59.36		13.13	23.06

Granular Base on New Grading

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. Previous Years	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	Longbow Corners easterly	9.00	1960	6.60	2.40	196,401
17 T.C.	9 mi. east of Longbow Corners easterly	9.57	1960	6.20	3.37	96,992
17 T.C.	19 mi. east of Longbow Corners easterly	11.08	1961	.....	11.00	283,618
116	Jct. Hwy. 72 westerly	3.12	1961	.....	2.00	22,567
	TOTALS	32.77		12.80	18.77	599,578

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles in Project	Work Begun	Miles Compl. 1961–62	Tons Placed 1961–62
17 T.C.	English River to Ontario-Manitoba boundary	222.77	1961	222.77	4,837
71	Jct. Hwy. 17 (Longbow Corners) to Jct. Hwy. 11	96.61	1961	96.61	1,895
11	Jct. Hwy. 71 to Rainy River	33.74	1961	33.74	33
105	Jct. Hwy. 17 T.C. to Ear Falls	62.60	1961	62.60	2,732
119	Jct. Hwy. 17 to Richan	13.01	1961	13.01	226
128	Kenora (north limits) to Redditt	18.60	1961	18.60	1,182
594	Dryden (south limits) to Jct. Hwy. 17	22.60	1961	22.60	3,190
596	Darlington Bay bridge to Jct. Hwy. 17	18.20	1961	18.20	1,250
600	Jct. Hwy. 71 to Rainy River	59.00	1961	59.00	4,480
601	Jct. Hwy. 17 (east branch) to Jct. Hwy. 17 (west branch)	16.60	1961	16.60	102
602	West limits, town of Fort Frances to Jct. Hwys. 11 and 71 (Emo)	29.20	1961	29.20	530
603	Jct. Hwy. 17 T.C. to Dyment	3.10	1961	3.10	630
604	Kenora (east limits) to Jct. Hwy. 128	17.30	1961	17.30	745
605	Jct. Hwy. 17 T.C. to end of road	7.55	1961	7.55	600
611	Jct. Sec. Hwy. 602 to end of road	12.70	1961	12.70	1,305
613	Big Fork to Lake Despair	25.50	1961	25.50	24
615	Burditt Lake to Jct. Hwy. 71	12.50	1961	12.50	9,400
617	Stratton to Jct. Sec. Hwy. 600 (north branch)	14.40	1961	14.40	4,130
619	Pinewood to Jct. Sec. Hwy. 621	25.50	1961	25.50	4,458
621	Sleeman to Lake of the Woods	33.40	1961	33.40	1,248
	TOTALS	744.88		744.88	42,997

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		.....	1,569	.....
Calcium for de-icing roads		.....	37	.....
Off-road parks maintained		19	.....	.....
Roads snowploughed and kept open, King's Highways		9	.....	582.96
Roads snowploughed and kept open, Secondary Highways		17	.....	319.30
Roadside picnic places maintained		12	.....	.....
Routine maintenance, King's Highways		.....	.....	582.96
Routine maintenance, Secondary Highways		.....	.....	319.30
Salt for de-icing roads (raw)		.....	1,583	.....
Salt in sand, stockpiled		.....	1,750	.....
Sand for winter maintenance		.....	22,900	.....
Scale houses maintained		4	.....	.....
Seeding by department's forces	(acres)	375	.....	.....
Signs erected or replaced		3,341	.....	.....
Snow fence erected, dismantled, stored		.....	.....	50.3
Weed control		.....	.....	116.2
Zone painting on King's Highways	(gals.)	6,476	.....	310.9

PLANNING AND DESIGN BRANCH

JOHN WALTER, P.Eng., *Director of Planning and Design*

PLANNING DIVISION

J. B. Wilkes, P.Eng., *Planning Engineer*

Location Section

H. A. Mantle, P.Eng., Location Engineer

Location Field Subsection

Numerous field surveys were made this year for horizontal and vertical control of aerial photographs. These were used by the Photogrammetry Subsection when preparing study plans. Field surveys were also made to supply control information for 50′ = 1″ and 100′ = 1″ plans prepared with the aid of the new photogrammetric stereoplotting equipment.

A total of eight hundred and fifty miles of location surveys for existing and proposed highways were completed. In addition ninety surveys for bridge sites, fifty surveys for Railway Board plans and eighty miscellaneous surveys were completed.

Surveys for traffic studies were undertaken for the following:

Intersection studies	190
Speed studies	141
Volume studies	190
Vehicle counts, taken on regular scheduling on a 24-hour basis	7,249
Origin and destination surveys	40

Location Plans Subsection

Some 818 miles of location plans of existing and proposed highways were completed. In addition 89 plans for bridge site surveys and 48 Railway Board plans were completed. A summary of this plan preparation work by districts is as follows:

District	Miles of Detail Plans	Number of Bridge Site Plans	Number of Railway Crossing Plans
2. London	.....	1	
3. Stratford	9.6	....	
4. Hamilton	82.2	19	16
6. Toronto	63.4	18	5
7. Port Hope	101.8	4	4
8. Kingston	82.5	10	7
9. Ottawa	38.6	6	2
10. Bancroft	49.7	4	5
11. Huntsville	28.9	6	2
13. North Bay	15.4	2	
14. New Liskeard	24.8		
16. Cochrane	1.5	2	1
17. Sudbury	48.6	3	1
18. Sault Ste. Marie	63.0	8	3

District	Miles of Detail Plans		Number of Bridge Site Plans	Number of Railway Crossing Plans
19. Fort William	54.1		2	....
20. Kenora	91.8		1	2
SUB-TOTAL		755.9	86	48
7. Port Hope (T.C.H.)	10.8		....	....
8. Kingston "	13.1		1	....
11. Huntsville "	0.6		....	....
17. Sudbury "	5.1		....	....
19. Fort William "	32.5		2	....
TOTAL T.C.H.		62.1	3	....
GRAND TOTAL		818.0	89	48

In addition to the standard plan preparation work, the compiling and preparation of a variety of special plans increased during this year. These plans are mainly presentation plans, photographic mosaics, functional design plans. Two complete functional design reports, Highway 12, the Narrows crossing at Atherley and proposed Highway 24, Simcoe to Paris, were produced.

Included in this work is new detail to be added to plans as submitted by the districts from new permits being issued.

During the year, 601 new plans and profiles were numbered and cross referenced. Existing plans were up-dated with 5,080 new land plans and sub-divisions, and reference plans.

Highway strip plans were prepared for three new highways, 30 existing plans were retraced due to changes and 83 plans were up-dated. Up-to-date strip maps are now available on all King's highways and secondary highways.

Some 1,240.8 miles of grading and alignment work were completed and 69 bridge site plans were issued to the Bridge Division for design purposes. A summary of this design work, by districts, is as follows:

District	Grades and Alignment Miles	Bridge Site Plans (Supplied to Bridge Division for Design)
Hamilton	67.7	23
Toronto	.....	4
Port Hope	112.7	1
Kingston	133.3	8
Ottawa	60.0	9
Bancroft	68.4	1
Huntsville	68.8	7
North Bay	49.7	4
New Liskeard	20.3	....
Cochrane	28.4	1
Sudbury	65.3	1
Sault Ste. Marie	225.1	4
Fort William	108.3	1
Kenora	223.0	4
Miscellaneous	9.8	....
TOTALS	1,240.8	69

Photogrammetry Subsection

During the year this section has projected on aerial photographs some 462 miles of new centre-line locations and added 732 miles of revised locations to existing plans.

It has produced some 15 study plans at the scale of 400′ = 1″ covering 299,695 acres and revised seven study plans of the same scale covering 97,910 acres.

It has produced six study plans at the scale of 1″ = 1,320′ covering 1,876 square miles.

Since the stereoplotting section has been operational we have produced five new plans at the scale of 50′ = 1″ covering 2,366 acres and six plans showing both topography and planimetry at the scale of 100′ = 1″ covering some 13,554 acres.

Plans were prepared to show drainage patterns pertaining to Highway 401 in the Toronto area covering 88 square miles, in the Charlottenburg-Lancaster area covering 25 square miles and 1,500 acres in the Deseronto area.

Photo investigation for possible connections were done at Murphy Point Park site covering 20 square miles and between Bracebridge and Vankoughnet covering 5 square miles.

During this year a total of 9,843 prints were ordered and added to our files and some 300 miles of location line transferred from old to new photography.

Intersection Design Subsection

Channelizations completed	63
Interchanges completed	44
Service road designs	Nil
Miscellaneous projects	170
Truck climbing lane designs	2
Minor intersections	24
Property sales processed	24
Property requisitions	6
Applications	85
Patrol yards	41

Statistics and Economics Section

P. E. Wade, P.Eng., Highway Analysis Engineer

During the past year the section underwent some organizational changes with the transfer of the Urban Studies Group to the Traffic Section and the incorporation of a research group within this section. Activity in general by the section throughout the year continued with its usual presentation of information and reports, highlighted by the preparation of four different types of road log publications, the completion of a Middle Grand Valley Highway Study and the Brampton By-pass Highway Study, the undertaking of two research projects into Highway Strip Development and Control of Access Policy and finally the presentation of the Highway Subsidy Report to the Minister of Highways.

Inventory Group

This group continued its duties in maintaining the engineering inventory on provincial roads, bridges and railroad crossings and provided the basic information used by the Program and Special Liaison Section for their planning studies. In its activities, this unit answered several hundred requests for inventory

information of all types within and outside of the Department. During the year, this unit expanded its program of publishing inventory information in the form of logs by publishing, in addition to the Highway Log, the Structure Log and the Railroad Crossing Log dealing with information on King's and secondary highways, and began work on the Mileage Log which will be published in the following year. These reports consist of an IBM compilation of inventory information for each section of provincial highways and are published annually.

Transportation Studies

This small research unit continued its investigations on problems on road construction involving the development of other resources and requests from municipalities for road aid of various kinds. The unit prepared approximately fifty reports on these subjects. At the same time this unit represented the Department of Highways in the Interdepartmental Conservation Advisory Committee and at the National Resources for Tomorrow conference held at Montreal.

Regional Studies

This group conducted regional highway studies in built-up and urbanized areas outside urban municipalities. Two major reports were presented during this period—the Middle Grand Valley Highway Study dealt with future road plans in the Kitchener-Galt-Guelph area and the Brampton By-pass Study dealing with future highways in the Brampton area.

Research Studies

This newly formed unit undertook two projects during this year—one, dealing with various aspects of a controlled-access highway policy for the Province of Ontario, and secondly, a research study of the various aspects of the phenomenon of strip development along provincial highways in Ontario.

Highway Subsidy Study

This short-term study which was started early in 1961 carried out extensive research into the assignment of municipal subsidies in Ontario by reviewing statistics, and discussions with other departments and other agencies interested in this problem. The reports were prepared and presented to the Minister outlining the findings and proposals resulting from this study dealing with the subject of municipal highway subsidies.

Traffic Section

W. Q. Macnee, P.Eng., Traffic Engineer

Traffic Control

The Traffic Control Subsection continued the program to regionalize the traffic operational work. It is planned during the summer of 1962 to establish regional offices for the Eastern and Central Regions. It is also hoped that a regional traffic control group may be set up in 1963 at North Bay for the Northern Region. The Southwestern Region Group has completed two years of operation.

The work carried out by the Head Office group during the past year is summarized below.

Traffic Studies

The traffic studies group carried out 170 studies during the year. Major studies included a survey and study of the operating speeds on Highways 400, 401 and the Q.E.W. Studies were carried out to investigate the possibility of interconnected signal systems on Highway 11 at Richmond Hill and Highway 39 at Sandwich East and Windsor.

Some 92 meetings with municipal councils and police officials were attended by personnel of the group.

Traffic Signals

The signals group completed studies for the revision and redesign of 24 old installations. In addition, investigations were carried out for 18 new installations and 8 temporary installations. The work for 35 of these installations was completed. The operation and timing program of all signals except two in Northern Ontario was reviewed during the year.

Signs

The signing group prepared a total of 186 sign layouts, 74 of which were new interchanges or channelized intersections, 38 for existing intersections and 74 for special projects. In addition approximately 97 sign layouts were altered to conform to changes in signing policy.

Illumination

Illumination for 120 interchanges and intersections was recommended during the fiscal year 1961–62, with the installation work completed for some 50 locations.

Characteristics Subsection

A total of 630 requests for traffic information was processed by the Characteristics Subsection. These requests originated from the following sources: 498 from inside the Department, 87 from outside the Department and 45 from Southwestern Region.

The number of permanent counting stations was increased from 26 to 30. Three of the new locations were installed on the Toronto By-pass section of Highway 401 at the following points: between Woodbine Avenue and Leslie Street, between Bathurst Street and Dufferin Street and between Jane Street and Highway 400.

An overhead type installation was designed for these locations in order that a continuing progress record may be obtained during the reconstruction of Highway 401. This type of installation allows the lateral placement of the vehicle detectors to be changed as additional lanes are completed.

The Department now has five different types of vehicle detectors in operation at permanent stations consisting of magnetic, road treadle, ultra sonic, radar and infra-red light detectors. The last two are being tried initially by the Department on Highway 401.

A special project, set up last year and again undertaken this year on a continuing basis, was the participation of the Department with various Metropolitan Toronto municipal authorities in obtaining traffic volume counts on a cordon

line bounded by Highway 27 on the west, Highway 401 on the north and the railway line east of Kennedy Road on the east.

The program in which two vehicle classification surveys are taken each year by the highway maintenance patrols was continued. Over 700 locations were counted on each survey. Results from these surveys were issued to the Department of Transport.

The program of inventory counting was accelerated this year in order to allow for up to six traffic volume counts being obtained on each significant section of the King's Highway system and Secondary Highway system during the year.

A program was developed this year by which the facilities of the Electronic Computing Centre were used to calculate Annual Average Daily Traffic (AADT) volumes. The records from the permanent counting stations formed the basic seasonal variation patterns for this program and the inventory counts formed the bulk of the input data. From these items the computer calculated the AADT volumes on most of the sections of highway. The results were published in the 1955–1961 AADT volume book.

In addition, the book contained summarized truck percentages from the semi-annual vehicle classification survey, summary tables and details on the fluctuations of traffic volumes which occured at permanent counting stations. The general trend in traffic volumes for the King's Highway system, included in the book, indicates that the average rate of increase for the six-year period is a little over five per cent per year.

The Accident Records Group was transferred to form part of the Characteristics Subsection in November 1961.

Route Analysis

Some 91 requests were processed during the fiscal year in the Route Analysis Group. Some 68 requests were received, and 23 back-log requests completed.

These requests necessitated the planning, processing and analysis of 17 origin destination surveys, with a total of 149 stations and about 260,000 interviews.

Eight of these surveys were closed cordon with 91 stations, and 185,000 interviews, in the vicinity of the following centres:

Barrie, Hamilton, Kingston, Oshawa, Woodstock, Chatham and Windsor. The surveys at Chatham and Windsor were done by consultants under the guidance of the Department. All of these surveys were done for an urban transportation study of the municipality.

Two screen line surveys were done at Woodstock and Cobourg, involving 16 stations and 16,000 interviews.

Six partial cordon surveys and one area study survey were done involving 59,000 interviews and 42 stations.

The first stage of the Toronto-Hamilton area study, including the planning of the study and some of the field work, was done during the fiscal year.

A series of electronic computer programs have been developed to facilitate the processing and analysis of traffic planning data. These programs include a

minimum path route selection program, an iteration program for traffic projection, an all or nothing traffic assignment program plus a full complement of computer programs for gravity model analysis.

These programs have been applied extensively to urban transportation studies in which the Department is participating.

Up to the end of the fiscal year, 12 urban transportation studies have been completed with an additional 9 studies in various stages of completion.

Advancement has been made on the development of an electronic computer program for processing origin-destination survey data. This program will eliminate much of the time consuming work associated with this phase of a planning study. This and other procedures are being developed and written up with a view to publication of a manual. The extra time spent on research and development is advancing the knowledge in the various fields of traffic assignment and prediction, and the results of such knowledge are making the planning and design of highways more efficient.

At the end of the fiscal year the Route Analysis Group was enlarged to include some of the functions performed by the Statistics and Economics Section. This group is now able to perform all the functions related to traffic planning in the Department.

Traffic Safety

This subsection is responsible for compiling and maintaining complete records of the locations of all motor vehicle traffic accidents occurring on the King's Highway system, county and township roads. Also maintained is a record of accidents occurring on streets in municipalities where a King's Highway forms a connecting link or is assumed by the Department. All reports of accidents are recorded and filed by highway location which facilitates the application of accident statistics in traffic engineering studies; the planning and design of highways, etc. The compilation of statistics includes accident experience records for sections of highways and specific locations, i.e., intersections, railway crossings; tabulations of fatalities, injuries, property damage, etc.

The manual "Summary of Accidents and Fatal Accident Analyses for 1958-59 and 60" was prepared and distributed to senior officials of the Department. This manual provides a detailed summary of the locations of all reportable accidents occurring on the King's Highway. The monthly compilation of "Fatal Motor Vehicle Accident Reports" was continued, describing in detail, the locations of all fatal motor vehicle accidents occurring on highways. These statistics are made available to senior officials of the Department of Highways; Department of the Attorney General, district engineers and provincial police inspectors.

Semi-annual reports were compiled for the county engineers, showing detailed information regarding the locations of motor vehicle traffic accidents on the county roads system.

During the fiscal year, the Traffic Safety Subsection processed a total of 769 requests for accident statistics, of which, 162 were from the Southwestern Region Planning Division. Special accident experience studies were compiled for presentation as highway safety evidence at Ontario Municipal Board hearings in the matter of applications by the Minister for the approval of the closing of certain roads intersecting controlled access highways.

Traffic accidents, particularly fatal accidents, are publicized frequently but few persons have knowledge of where, on a province-wide basis, most of the accidents occur, what types are most frequent and the major factors in the occurrence of accidents. During the calendar year, January 1–December 31, 1961, a total of 619 persons lost their lives in 510 fatal accidents, occurring on the King's Highway system, exclusive of secondary highways. Drinking drivers and pedestrians were involved in 184 fatal accidents or 36.1 per cent of the total. Two hundred and twenty-two (222) persons were killed in these accidents, accounting for 35.9 per cent of all persons killed.

In any systematic study of conditions affecting motor vehicle traffic accidents on the King's Highway system, county and township roads, etc., the first important requirement is full knowledge of their frequency and detailed information regarding their occurrence. With these data available, highway safety is open to attack along any of a number of lines, including highway improvements, traffic regulations, law enforcement, public education, etc.

The Traffic Safety Subsection was merged in November 1961 with the Characteristics Subsection.

Planning Services Section

Y. Andersen, Superintendent

During the year 53 connecting link construction proposals which were initiated by the municipality were received, reviewed, approved and processed. In addition approximately ten construction proposals which were incorporated in Departmental contracts were similarly processed. Additional connecting link basic agreements were negotiated and transfers assumptions, designations and reversions were reviewed and approved. All special building and entrance permits received were dealt with. The summary of connecting link expenditures, and the detail of assumptions, transfers designations and reversions are shown in the appendices to this report.

Right-of-Way Subsection

This Group performed the following functions:

Property Requests:

Some 450 property requests dealing with the scheduled program were plotted on our linens and reviewed. Some 385 property requests were either initiated and approved for the branch and distributed or received from district offices, reviewed, approved and distributed.

Property Sales:

A total of 650 requests to dispose of surplus property were plotted on our plans, reviewed and the necessary recommendations forwarded.

Plans of Subdivision:

In all, 625 new draft plans of subdivision were received and plotted on our plans. Of the total, 450 were returned to the Department of Municipal Affairs as not affecting this Department, and one hundred and seventy-five were reviewed in conjunction with the appropriate district engineer or the Municipal Roads

Branch, and considering our future plans, the necessary recommendations were forwarded to the Department of Municipal Affairs.

In addition to the above some 90 subdivisions by Description Reference Plan under the authority of the Land Titles Act, were reviewed, and recommendations passed to the owners and to the local Masters of Titles.

The Group continued necessary correspondence and reviewal of recommendations dealing with outstanding subdivision applications.

Official Plans:

In all, 22 new official plans (land use) were received, and in co-operation with the Traffic Section were reviewed, and our recommendations forwarded to the Department of Municipal Affairs. Some eighty amendments to existing official plans were dealt with by the group.

Southwestern Region Planning Section—London

C. R. Hopkins, P.Eng., Regional Planning Engineer

The scope of the work in this section includes program, traffic, planning services and location field surveys.

Location Field Subsection:

This group completed 173 miles of detail surveys and an additional 22 bridge site surveys and 19 Railway Board site surveys.

Location Drafting Subsection:

The following table shows the work accomplished by this subsection for the districts in the Southwestern Region, namely, District No. 1 -Chatham; District No. 2—London; District No. 3—Stratford; and District No. 5—Owen Sound.

District	Miles of Detail Plans	Miles of Functional Design Plans	Number of Bridge Site Plans	Number of Railway Board Plans
1	43	19	5	3
2	34	13	10	5
3	31	11	7	3
5	46	8	5	4
	154	51	27	15

Intersection Design Subsection:

The designs prepared for the four districts in the Southwestern Region by this group are summarized as follows:

Interchanges	3
King's Highway channelizations	70
County road designs	7
Commercial entrances	43
Patrol yards	6
Property requisition and disposal	8

Traffic Subsection:

During the year this group accomplished the following:

Special volume counts	213
Speed studies	50
Turning movements	51
Miscellaneous requests	12
Traffic pattern counts	1,800

Miscellaneous:

About seventy surplus property sales or retentions were processed, and also about sixty permit applications.

Cartography

C. P. Robins, Supervisor

Early in the year maps at a scale of 4 miles to 1 inch of the single map of Bruce and of the combination York and Ontario were printed from bases revised in 1960.

Bases were revised and maps printed, on the same scale, of the combination Brant, Elgin, Middlesex, Oxford, and Norfolk, and the combination Frontenac and Lennox and Addington. A new lithographic map of the southern portion of the District of Sudbury was printed.

In each case the printer furnished a white print of the map which was coloured in this section as a guide for the printer as to where to place the various colours.

During the latter part of the year, the bases for the single maps of Grey, Prince Edward, and Parry Sound, and of the combination Northumberland and Durham, Victoria, and Peterborough were revised in preparation for printing new maps in 1962.

The leading map companies in the United States were supplied with information concerning new pavements and new highways so as to bring their road maps of Ontario up to date.

Work proceeded at varying intervals on the new county map of Simcoe at a scale of 1 mile to 1 inch. Plans of the following townships were redrawn and brought up to date: Alfred, Beverly, Blenheim, Brudenell, Burford, Cornwall, Cumberland, Dawn, Glanford, Griffith, McGregor, Maidstone, Matilda, Moore, Niagara, Osnabruck, Russell, Sandwich W., Sarnia, Sebastopol, Sombra, and Williamsburg.

Work was done from time to time on the following miscellaneous jobs:

1. Revising county and township plans to show new highways and new annexations to the various municipalities.
2. Checking county by-laws.
3. Reviewing subdivision plans.
4. Revising surface sheets for use in the section and in the head office of the Municipal Roads Branch.
5. Revision of wall maps for the various branches of the Department.

Towards the latter part of the year all tracings of the districts which are used as patrol maps were revised and brought up to date.

Many revisions were made on the road map bases in preparation for printing the 1962 road map. These consisted of showing new pavements, new King's Highways and Secondary Highways, new place names. All copy for the printer was assembled from the most up-to-date sources. The mileage tables were checked and revised in accordance with the highway log prepared by the Economics and Statistics Section. All printed matter was proofread twice and corrections made. After the base went to the printers, a great deal of checking was carried out to ensure that all revisions would appear.

After a period of practice in scribing, new bases were made by this process for a map of the District of Manitoulin at a scale of 4 miles to 1 inch, each colour having its own base. Towards the latter part of the year the map was published.

Some preliminary work was done on similar maps for the York-Ontario-Welland area and for the Huron-Wellington area.

Some preliminary work was done in preparation for scribing a new set of bases for the 1963 road map.

ROAD DESIGN DIVISION

H. D. McMillan, P.Eng., *Road Design Engineer*

D. W. Farren, P.Eng., *Assistant Road Design Engineer*

During the fiscal year, 1961–62, the number of projects pre-engineered, computed and checked was 164. These projects consisted of 696 miles of grading, drainage, granular base and paving, 200 miles of paving only, and 76 structures.

Of the above totals, work on Highway 401 accounted for 42 projects consisting of 125 miles of grading, drainage, granular base and paving, and 31 structures.

Work on the Trans-Canada Highway accounted for 13 projects consisting of 140 miles of granular base and paving, and 5 structures.

An accelerated program was carried out to complete the pre-engineering and design of highways required to link communities throughout Northern Ontario, particularly the sections between Fort Frances and Atikokan, and between Chapleau and Wawa.

Detailed drawings of 25 channelizations, 19 cloverleafs, and five interchanges were produced by the Intersection Detail Design Group.

The use of electronic computations was further developed with a set of tables being produced listing the tangent offsets for compounded spirals. These tables simplify the calculations connected with the design of intersections. The quantity program was modified to introduce the calculation of superelevated sections in electronic computation.

A major change carried out during the year was the completion of the development of reduced size contract drawings. As a result, a considerable number of contracts were produced in this manner up to March 31, 1962. In connection with reduced size drawings, pre-printed quantity and tabulation sheets, and the

preparation of these sheets by typewriter instead of by draughting eliminated a great deal of tedious manual printing. The type of materials used and offset printing resulted in a marked improvement in the quality and appearance of the contract documents at considerably lower cost to the Department.

During the year, the Road Design Office developed and presented a brief on drainage policy to the Minister. The approval of the principals and policies recommended in the brief give the Department positive direction in negotiations with other jurisdictions in drainage development schemes and promotes sound engineering, economy, and long-range planning in the solution of these problems.

The installation and field proving of the non-traversable steel-beam and channel guiderail, tested experimentally in the U.S.A., but further improved and developed by Road Design on the Queen Elizabeth Way, is a major step forward in safety. This guiderail prevents cross median opposed traffic collision—the most serious type of freeway accident, and with modifications, still in the experimental stage, eliminates headlight glare.

BRIDGE DIVISION

A. M. Toye, P.Eng., *Bridge Engineer*

The activities of the Bridge Division can be summarized under the five sections which form the division.

Bridge Planning Section

S. McCombie, P.Eng., Bridge Planning Engineer

This section is responsible for the investigation and approval of all proposed structure sites. The work was carried out by three bridge location engineers and one bridge location technician who work on a regional basis although not as yet established in regional offices.

During the year, 65 scheduled structures sites were studied and approved. In addition, 13 sites for proposed municipal structures and five sites on resources and access roads were investigated. A total of 28 unscheduled structure sites were also studied and reported on.

The hydrology subsection carried out hydrological investigations and prepared reports on 75 highway structure sites. In addition, similar investigations were carried out on 55 municipal structure sites.

The section also assisted the Department of Lands and Forests with advice on bridge sites under their jurisdiction.

Bridge Design Section

B. R. Davis, P.Eng., Bridge Design Engineer

During the year there were 129 designs started and 193 designs completed.

Designs Begun		Designs Completed	
By Department designers	69	By Department designers	104
Special designs by Department	42	Special designs by Department	42
By consultants	18	By consultants	47
Total Designs Started	129	Total Designs Completed	193

The completed designs included 43 all-welded structural steel designs, 38 prestressed concrete designs and a variety of rolled steel beam, reinforced concrete and timber designs.

In the case of each of the all-welded steel designs, the plate steel is available from Canadian Mills. The policy was continued of designing welded plate girders which could be made from Canadian plate in preference to rolled shapes which would have to be imported.

The largest structure of this type designed was the Windy Point Bridge on Highway 11, in the Kenora District. It is a three-span welded girder design with spans of 142 feet, 188 feet, 142 feet. The foundations were founded on bedrock and the pier footings were placed by tremie concrete in 25 feet of water.

Of the 38 bridges designed using prestressed concrete girders, more than 20 were four-span underpasses. The majority of these used partial continuity to economic advantage, introducing savings of about 20 per cent in girder costs. Further savings have been realized by taking advantage of the latest fabricating techniques. The longest completed design using prestressed concrete girders was the Lemonville Road bridge which crosses the C.N.R. and Highway 403 near Hamilton. This is a seven-span structure of about 570 feet in length.

One of the most challenging current problems in design is the problem of designing grade separations over existing highways. A comprehensive study has been made and a report prepared on "The Design and Construction of Bridges over Existing Divided Highways." The report summarizes crossing conditions for various road geometrics and structure types. It also takes into account traffic conditions, detours, stage construction and the economics of various bridge types. The report has been used to advantage in many recent designs and has made possible the development of an exceptionally low-cost, four-span underpass using prestressed concrete, which has the advantages of a continuous concrete structure combined with minimum interference with traffic and minimum cost for detours. Two of these underpasses have been built over Highway 401 in the vicinity of Bowmanville and it is believed that the design will find many more applications.

During the year designs were prepared for over 300 standard concrete and timber culverts, with a total estimated value of three million dollars.

The year also saw steadily increasing use of the computer service. Some 2,316 structural problems were processed through the computer. We now have 42 computer programs in use, 17 of which were developed during the past year.

Bridge Control Section

A. E. McKim, P.Eng., Bridge Control Engineer

Contracts, estimates and special provisions were prepared for 233 structure contracts with a total value of $17,868,700.

These contracts included the following:

167 General contracts with a total value of	$14,892,599
49 Structural steel contracts totalling 11,273 tons	2,330,791
17 Prestressed concrete contracts	645,310
TOTAL	$17,868,700

During the year 1,160 purchasing requisitions were prepared specifying the quantity and quality of bridge materials supplied by the Department costing some $3,425,000.

These requisitions covered a wide variety of materials including 13,800 tons of reinforcing steel, 207,500 lineal feet of piling and 33,400 lineal feet of bridge handrailing. Arrangements were also made to have these materials inspected by private companies specializing in this work.

Several illustrations were prepared by the draughting group by the use of perspective drawings superimposed on photographic enlargements and models of proposed structures for presentation to Council and public meetings. Such presentations were prepared for the Rosedale bridge on Highway 35 and the Atherley bridge on Highway 12.

The construction liaison staff of the Control Section provided technical assistance to the Operations Branch during the year. An increase in the number of prestressed concrete bridges designed and built during the year saw an accompanying increase in the supervision provided for this type of fabrication and construction.

The quality of work in structural steel was greatly improved during the year, particularly with regard to the preparation for and application of the shop paint. New specification and procedures introduced in 1961 should cause a marked decrease in the maintenance cost of structural steel in the future.

The Control Section has been working with the Materials and Research Branch on the testing of new materials for bridge construction and on concrete quality control guidance for the Department.

The Control Section continued to check and approve all falsework diagrams submitted by contractors. Field inspection was carried out to check on new or doubtful practices, when requested by the districts.

Municipal Bridge Liaison Section

K. L. Kleinsteiber, P.Eng., Municipal Bridge Liaison Engineer

The Municipal Bridge Liaison Section approved 630 sets of plans and specifications for bridges, culverts and maintenance buildings. The majority of the plans were for new structures, replacing inadequate or damaged structures.

Central and Southwestern Ontario districts submitted the greatest percentage of plans. We approved 118 structures for District 6 and Metropolitan Toronto, 112 structures for the Chatham District, London, Hamilton, Stratford, and Owen Sound followed with 82, 65, 60 and 53 respectively. Proceeding east from Toronto the number of approvals per district were: Port Hope 49, Ottawa 34, and Kingston 16. For the remaining districts of the province we approved a total of 41 structures, with 13 of those for Huntsville and seven each for Bancroft and Sudbury.

The types of bridges approved were as widely varied as in previous years. There were 73 bridges in which structural steel formed the main component. Concrete bridges included 63 rigid frames, 20 reinforced concrete and 20 with precast and/or prestressed units. Timber bridges, 15 in all, were mainly in Northern Ontario, though several were approved for Southern Ontario.

In addition to reviewing and approving plans for new structures, 39 load restricting by-laws for municipalities were investigated, including one by-law which contained over 20 bridges.

Engineering Office Supervision

W. M. Killin, Engineering Office Supervisor

This section was responsible for the filing and typing services of the division; for the maintenance of records and statistics; for personnel administration; for the preparation of technical reports; and for miscellaneous technical duties.

Committee Work

In addition to the above activities many of our engineers were active in committee work for Canadian Good Roads Association, Canadian Standards Association, and Engineering Institute of Canada as well as for special Departmental committees.

Summary of Bridge Construction

During the calendar year 108 structures consisting of some 19,739 feet of bridging were completed.

A complete listing of these structures is given in Appendix 4. Not included in this listing are 492 concrete culverts in spans ranging from 4 to 20 feet and costing $2,737,000.

SERVICES BRANCH

H. S. HOWDEN, O.L.S., P.Eng., *Director of Services*

The Services Branch has increased to eleven sections by addition of the Service Areas Section. The function of this new section is the study, selection and construction of Service Areas on Highway 401.

The Service Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the Department.

Documents Section

H. A. Broom, Superintendent

The Documents Section is responsible for the custody of many of the Department's records. After two and a half years of work, files have been separated into two groups — active and inactive. This separation has increased the speed of service and at the same time saved space. Each of the four basic units of the Section, Correspondence Files, Plan Files, Library and Manuals has widened the scope and improved the efficiency of its functions.

The Library has acquired many new volumes and periodicals. Patronage has increased. Its press-clipping service has been improved.

The Manuals Group has improved its operation and liaison with the various branches of the Department. As a result, conflicting instructions within the Department occur less frequently.

The Correspondence Files Group has increased security, speed of service and space-saving by greater use of microfilming.

The Plan Files Group has begun the renumbering of all plans. This is an extensive task and only the coding has been completed to date. The object is conversion to an I.B.M. system. When done, this will make all plans for any given area easily available. Plans which have been coded are also cross-indexed under their old numbers to avoid any confusion that might arise during the change-over.

Equipment Section

L. Westlake, Superintendent

The Equipment Section is responsible for the technical supervision of all D.H.O. equipment. The Head Office and Regional staffs of the Section provide information and advice on design, specifications, procurement, maintenance, replacement and disposal of equipment. Before it is delivered to the Department, all major equipment is inspected by the Section.

The Section operates two garages, tree-saving equipment, two pavement deslicking machines and conducts a mechanics training school (mobile).

During the year, the Section was made responsible for arranging and supervising the drilling of water wells for the Department. This work required con-

struction of two special well-testing and pumping units by the Section's mechanical staff and the supplying of trained staff for the well drilling operation.

Over 800 asphalt distributing machines, either owned by the Department or used on work in which the Department had an interest (contracts, municipal etc.), were examined and certified as suitable for service.

Staff is supplied by the Section for Instrument Evaluation Studies and Engineering and Evaluation of Ferries. As in the past, all drives, parking lots and miscellaneous areas adjacent to the Department's buildings at Downsview were maintained by the Section. The responsibility for control of parking space for employees' cars was assumed by this Section.

Land Surveys Section

W. D. Ratz, O.L.S., P.Eng., Superintendent

The Land Surveys Section is responsible for making all land surveys and for the preparation and registration of all plans required for the acquisition or disposal of land and for the assumption, reversion, designation and closing of highways.

During the year the Section obtained registration of 2859 plans in the appropriate Land Titles and Registry Offices.

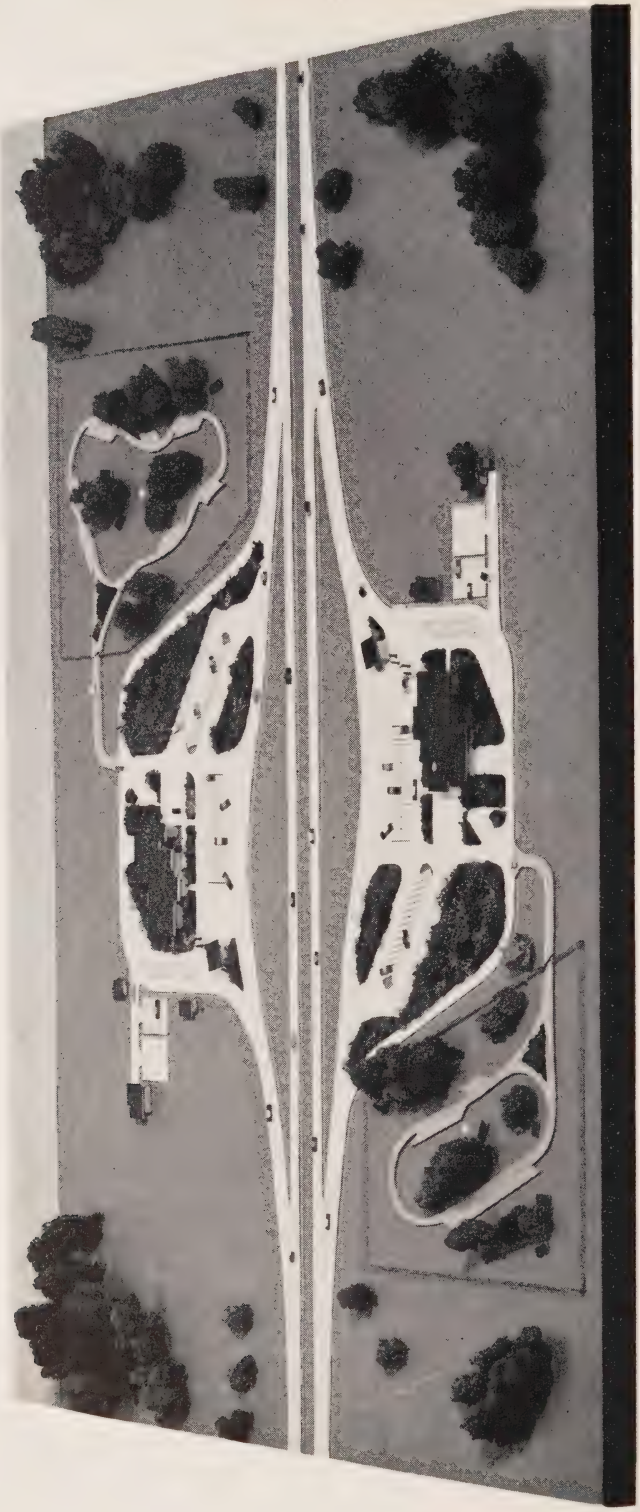
The following table outlines the various types of plans prepared by Land Surveys Section. The plans are listed by type and grouped according to function. Included in the table are the number of plans prepared and the total mileage of each type.

Appendices in this Report give details of controlled-access highway plans and assumptions, designations, reversions and transfers of sections of the King's Highway and Secondary Highway Systems.

One education course for field personnel of Land Surveys Section was conducted during the year. The course was attended by 26 candidates, 19 of whom qualified. In addition 173 employees tried qualifying examinations without attending a course and 95 passed. The Section is continuing its apprenticeship program to qualify employees as Ontario Land Surveyors. Three of the conditions of apprenticeship are that a candidate must serve four years under a surveyor and during that time pass an Intermediate examination and a Final examination which is divided in two parts. During the past year 1 candidate has passed the Intermediate examination, 6 candidates the Final examination Part 1, and 10 candidates the Final examination Part 2.

During the past year tests were made with the Facsimile Data-phone in connection with the I.B.M. 650 Electronic Computer. The tests were conducted between Land Surveys Central Region Office and the I.B.M. Computing Centre at Head Office. Future proposals call for tests from Kingston Region.

The Facsimile Data-phone, which utilizes the existing Government long distance telephone lines, permits the transmission of written or printed statistical data between the regional offices and head office and reproduces an exact copy of the transmitted material at the receiving end. This equipment may provide a convenient and speedy means of transmitting and receiving material from the region offices and result in greater use being made of the computer.



Model of proposed Highway 401 service areas.

Further tests were conducted with the Tellurometer, which the Land Surveys Section acquired in 1960 for carrying out precise surveys to establish a control for future highway surveys with a view to including them in the ever-expanding geodetic network in the province.

In addition to the Tellurometer, the Department has recently acquired another electronic surveying instrument known as the Geodimeter Model 4.

This device, by means of phase shift comparison of modulated light waves reflected from the distant point, is capable of measuring any distance from 50 feet to 3 miles within a fraction of an inch.

This will be used by the Department's surveyors and engineers to set accurate ground control for aerial photogrammetry and to allow precise control measurements to be obtained in all of the Department's land surveys operations.

TOTAL NUMBER OF PLANS AND MILEAGE

Type	Nomenclatures	No. of Plans	Mileage
Plan Types A–H Inclusive—Acquisition of Lands			
"A"	Land Plans	1,988	304.451
"B"	Amended Land Plans	99	.320
"C"	Land Plans Acquiring Limited Interest	53	10.465
"D"	Plans of Abandonment	49	5.809
"E"	Crown Land Plans	125	158.045
"F"	Amended Crown Land Plans	8	.....
"G"	Crown Land Abandonment Plans	1	.010
"H"	Navigable Waters Protection Act Plans (Crown)	13	.541
Plan Types I–M Inclusive—Assumption of Existing Highways			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway	7	24.300
"J"	Amended Preliminary Assumption Plans	2	.....
"K"	Assumption Plans (Replacing)	96	203.964
"L"	Assumption Plans	96	21.269
"M"	Amended Assumption Plans	15	5.900
Plan Types N–P Inclusive—Designation of Highways			
"N"	Proposed Highway Plans	17	55.390
"O"	Highway Plans	107	441.470
"P"	Controlled-access Highway Plans	1	6.100
Plan Types Q–T Inclusive—Transfer and Closing of Highways			
"Q"	Reversion to Road Authority	5	3.405
"R"	Transfer to Municipality	88	105.991
"S"	Closing of Road, Plans to Illustrate Route Closed by Order-in-Council	75	30.121
"T"	Road Closing Plans (Ontario Municipal Board)	4	0.057
Plan Types U X Inclusive and Others—Miscellaneous and Special Plans			
"U"	Plans to Illustrate Descriptions	579	102.461
"V"	Survey Plans of Boundaries — Supplementary	85	79.133
"W"	Indian Affairs Plans	3	5.032
"X"	Connecting Link Designations and Agreements	82	149.950
	Miscellaneous Plans	107	29.434
	Totals	3,705	1,743.618

Office Services Section

S. C. Booth, Superintendent

The Office Services Section processes requisitions for office supplies, furniture, office equipment, stationery and medical supplies and distributes these to all

Districts, Branches and Sections of the Department. During the past fiscal year, 22,853 requisitions were processed.

The Reproduction Offset Unit reproduced 7,211,544 copies from 29,068 plates during the year.

The Reproduction Whiteprint Unit produced 2,911,330 lineal feet of whiteprint during the year.

The Office Services Section is responsible for the D.H.O. postal service to all Department of Highways Districts, Regional Offices and Head Offices in the Metropolitan Toronto area. In addition, it provides guide service in the Downsview buildings.

Property Section

H. Barry, Superintendent

During the year, 4,053 new agreements were negotiated with property owners which, added to the carry-over of 736 from the previous year, resulted in a total of 4,789 agreements. Of these 3,997 were paid, the amount involved being $8,919,490.31.

The purchase of right-of-way for Highway 401 progressed favourably. Only 64 vendors from a total of 5,153 are awaiting settlement. Almost $28,000,000.00 has been paid in Highway 401 compensation agreements to March 31, 1962. Revenue from surplus property sales along Highway 401 amounts to just over $2,500,000.00. In addition to purchasing the original right-of-way, the Property Section has been appraising and buying property needed for the widening of Highway 401 between Avenue Road and Yonge Street. This operation has involved 56 owners and included 51 houses. By the 31st March, 1962, 34 buildings that must be removed from the right-of-way had been sold by public auction.

Twenty-seven new applications for determination of the amount of compensation were made to the Ontario Municipal Board: 24 were carried over from the previous year. Of these 51 applications, 14 were cancelled and settlements made. Sixteen awards were handed down and judgment was reserved in four cases. Seventeen applications are still outstanding.

It is now a definite function of the Section to appraise properties before purchase and before sale. A total of 2,799 properties were appraised during the year.

Requests to purchase right-of-way for proposed Highway 404 involving 115 properties have been received and 88 of these properties have been purchased. The total cost to date is $1,883,255.80.

At the end of the year, 3,235 properties were surplus to requirements. Of these, 722 were considered unsaleable because of their size, shape, lack of access or location. Revenue from the sale of surplus property was $599,473.92. Revenue from leased properties was $255,204.29.

Three public meetings were held. These meetings were called to bring together representatives of the Department and parties who had an interest, direct or indirect, in the effect of a particular Department program. Meetings were well attended and proved, generally, to be of value to both the Department and property owners.

Two courses for probationary Agents were held, one in September, 1961, and the other in March, 1962. All nine candidates obtained their probationary Property Agent status.

Regional Services Managers Section

Under the supervision of the Director of Services, Regional Services Managers co-ordinate within their Regions the functions of the Services Branch so that it may assist other Branches as effectively as possible.

This work is the responsibility of a small staff located in each of the five Regions and directed by a Regional Services Manager.

Following is a list of Regional Services Managers and the Region to which each has been assigned:

1. M. W. Robinson	South-western Region
2. D. W. Baird	Eastern Region
3. N. D. Bennett	Central Region
4. H. Aron	Northern Region
5. D. F. Walton	North-western Region.

Service Areas Section

C. S. Moase, Manager

The Service Areas Section was established and was authorized to proceed with the study, selection and construction of Service Centres on Highway 401 at intervals of approximately 50 miles.

Preliminary study, investigation and preparation for calling of tenders for the construction, operation and maintenance of Service Areas on Highway 401 continued to the end of the year.

NOTE. — First tenders were called on April 9, 1962.

Special Serv ces Section

F. E. Cavell, Superintendent

The Special Services Section is responsible for the architectural design and functions of D.H.O. buildings.

The Section designed, allocated and controlled office, garage and storage space and maintained and serviced buildings and communication systems.

The Section authorizes and arranges for building construction, the maintenance and repair thereof, the acquisition of building equipment (heating, plumbing, electrical etc.) and the installation and use of equipment for all types of communication. It maintains liaison with the Department of Public Works in all matters involving property sites and building needs.

One hundred and sixty-five plans were prepared. Seventy-five property requests for new building sites were received of which 42 were approved. During

the year the District Office at Sault Ste. Marie was occupied. Additional space was acquired for both North Bay and Fort William Regional offices.

In liaison with the Department of Public Works, twenty-four metal buildings were completed by contract. An addition to the District Office at Huntsville was completed. Plans for a new office building in Kingston were completed. A new District repair garage at Sault Ste. Marie was completed by Department of Public Works contract. Heating system renovations in District Offices at Owen Sound and London Districts have been completed.

During the year, there were some 2,600 requests for buildings and related services.

New mobile radio systems were installed for the Stratford, Port Hope and Huntsville Districts. A radio connecting link was provided on Red Lake Road. The Section compiled a report of radio organization and connection with the Emergency Measures Organization.

Direct-in-Dialing services were installed in Downsview office buildings by the Department of Public Works. Automatic switchboards were installed in the various District Offices.

The present automatic teletype system has increased the efficiency of teletype message transmission. A total of 198,000 messages were carried during the year. Voice recording equipment was installed at Downsview providing a fast method of message despatch.

The Section conducted a month's test of Phon-Fax equipment, a device for transmitting exact copies of documents over long distance. The results were inconclusive. More exhaustive tests are scheduled for the near future.

Supply Section

R. W. Rawlings, Superintendent

The Supply Section is the material procurement and distribution agency of the Department. In addition to buying materials and equipment for the construction and maintenance of Ontario Highways, the Section establishes the procedures for the distribution, security and accounting of these materials.

The several functions of the Supply Section include the operation of a complete Bailey Bridge supply service which provides service to municipalities as well as to the Department. A Bailey Bridge supply and service depot is operated in each Region.

Courses of instruction in the maintenance and erection of Bailey Bridges were held in each of the five Regional Depots. These courses were attended by about 50 employees from the various Districts and by 38 candidates from participating municipalities.

One thousand tons of Bailey Bridge material were repaired, cleaned, tested and painted. Some 52 bridges were erected and an additional 44, having served the purpose for which they were erected, were dismantled and the component parts returned to stock. At the 31st of March, 1962, 152 Bailey Bridges were in use in the Province.

The Material Control Unit of the Section is responsible for the disposal of all surplus equipment and materials. Whenever practicable, surplus materials are transferred to Department projects requiring them. Obsolete items and items no longer useful to the Department are sold.

The purchasing office at Downsview spent nearly $30,000,000.00 on materials and equipment.

The Central Stores warehousing unit continued to operate at Downsview and distributed material to the value of about $2,200,000.00.

During the year, there were 226 sales of surplus items. Some items are sold by tender and some by public auction. A total of $333,135.86 was collected from the sale of surplus and obsolete material and equipment.

Regional Supply Supervisors continue to scrutinize purchasing, material distribution and security methods in the Districts. Inventories are adjusted constantly to conform to local requirements.

Tenders Section

W. T. Whittle, Manager

The Tenders Section processes tenders for construction and maintenance contracts, property sales, material and equipment purchases and for obsolete equipment and material sales. The Section arranges and conducts all public tender openings. It supplies tendering information and forms to prospective bidders.

The Section ensures that all tendering procedures are followed. It recommends revisions in procedures as they are required. The Section places advertisements for tenders, auction sales etc. and processes advertising accounts. During the year, the Section issued to newspapers 1,842 "advertising orders" authorizing the placement of some 2,363 advertisements at a cost of $100,334.84. It collects fees for tendering material and also distributes manuals dealing with "Specifications and General Conditions of the Contract".

During 1961, the Section assisted the International Bridge Authority of Michigan in the calling of four contracts for the Sault Ste. Marie International Bridge. The Section was responsible for the placement and payment of advertisements, the distribution of tendering material and the collection and refund of applicable fees.

During the year, the fees for reduced-size Manuals on "Specifications and General Conditions of the Contract" were increased from $5.00 to $15.00 a copy. The Section distributes specification revisions to all Contractors.

Tendering procedures for Special Services Section contracts were written during the year.

The first reduced-size contract plans in book form were released.

The "Directory of Contractors and Suppliers" was revised and distributed to Department personnel.

A total of 7,762 tenders, representing approximately 46% of the total tenders submitted, was received and recorded at the Queen's Park Post Office during the year.

PERSONNEL BRANCH

J. POGUE, *Director*

The Personnel Branch administers the recruitment and placement of staff, staff movements, training, organization and classification, personnel records, the staff establishment of branches, the departmental safety program, the Public Service Superannuation Act and is the branch responsible for the introduction and maintenance of the Ontario Civil Service Re-classification program.

Recruitment Section

Employment requirements are determined by the Recruitment Section, after consultation with branch heads and district engineers. The recruitment and selection program is then carried out. This section arranges transfers of staff within the Department to meet changing needs, or to assist employees who may be unsuited to their present positions, or who may wish to transfer to improve their personal advancement. Transfers to and from other departments are also arranged.

From April 1, 1961 to March 31, 1962, there were 4,997 replacements and additions to staff. This figure includes 3,459 seasonal workers and 552 students.

The Recruitment Section hired 418 persons, the remainder of those hired being recruited locally by the regional and district offices. The staff engaged by the Recruitment Section was allocated as follows:

Administration Branch	46
Financial Comptroller's Branch	25
Legal Branch	4
Operations Branch	112
Personnel Branch	16
Planning and Design Branch	107
Services Branch	108
TOTAL	418

The staff of the Recruitment Section, during this period, conducted 4,489 interviews with applicants for employment and, in addition, conducted many counselling interviews with employees seeking guidance in connection with personal problems which they were unable to resolve through their supervisors.

The graduating classes in civil engineering at University of Toronto, Queen's University, University of Western Ontario and Waterloo University were interviewed and selections made.

Competition letters, both those published by the Civil Service Commission and the Department's own, were circulated throughout the Department describing positions as they became vacant, inviting qualified members of the staff to apply.

Records Section

The Records Section is responsible for the proper documentation, recording

and filing of all employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

All questions connected with benefits derived under the Public Service Superannuation Fund are directed to this section, as are queries connected with attendance and vacation credits.

The position inventory for the entire Department, which is now required under the Ontario Civil Service Reclassification Program, is maintained by this section, involving approximately 20,000 transactions in addition to those mentioned below.

As at the end of the fiscal year the Department's work force was 12,814 and was distributed as follows: (The figures for the fiscal years 1959–60 and 1960–61 are also shown for the purpose of comparison.)

	1961–62	1960–61	1959–60
Deputy Minister's and Administration Branch	264	251	274
Financial Comptroller's Branch	253	255	297
Services Branch	1,245	1,276	1,261
Planning and Design Branch	1,057	1,019	1,030
Office of the Chief Highway Engineer	8	.....	.....
Operations Branch	9,867	9,499	9,672
Personnel Branch	56	47	49
Municipal Roads Branch	24	47	100
Legal Branch	40	39	.....
TOTALS	12,814	12,433	12,683

The total work force of 12,814 includes salaried and hourly-rated and was grouped as follows:

	1961–62	1960–61	1959–60
Permanent and temporary staff	5,801	5,333	4,671
Casual staff	5,924	5,981	6,489
Labourers	1,089	1,119	1,523
TOTALS	12,814	12,433	12,683

By occupation the employees were grouped as follows:

	1961–62	1960–61	1959–60
Clerical and stenographers	1,979	1,953	1,993
Graduate engineers	386	361	376
Engineer's assistants	2,389	2,569	3,000
Draughtsmen	632	660	677
Skilled and unskilled labour	6,184	5,852	5,834
Others	1,244	1,038	803
TOTALS	12,814	12,433	12,683

During the year, 32,243 personnel transactions were carried out by the Personnel Branch. These were as follows:

*New appointments	4,437
Terminations	4,617
†Salary and other changes	23,189

* This figure includes 3,459 seasonal help and 552 summer students.

† This figure includes general salary revisions for clerical classifications, engineers and engineer's assistants classifications.

Organization and Classification Section

This section is responsible for the administration, throughout the Department, of the classification and salary plan established by the Civil Service Commission. It is responsible for the administration of a similar departmental program governing the casual employees who are not subject to the Public Service Act.

It is also responsible for the program of appointments to the permanent staff of temporary and casual employees.

The section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to the individual employees.

The most significant and far-reaching development during the year was the introduction of the Ontario Civil Service Re-classification Program.

This placed a very heavy burden on the section, as all administrative arrangements for the introduction of the program were made by this section.

However, the existing procedures for personnel administration within the Department lent themselves readily to the implementation of the plan, and it was not found necessary to adopt all the proposals made by the Central Project Group. It was necessary to recruit additional staff to handle the greatly increased volume of work, but these persons were readily absorbed into the framework of the existing organization, which proved to be suitable without modification.

Employees of the section prepared the majority of organization charts and position inventory charts required by the program, receiving guidance from the staff of the Central Project Group, and assisted supervisory staff of the various branches and districts to prepare the necessary position specifications.

The routine maintenance of the program was also undertaken by the section.

Consequent upon the introduction of the program, new procedures were introduced by the Civil Service Commission in connection with the processing of promotions, transfers, appointments to staff and other related transactions. As some of these procedures were lengthier and more complicated than those formerly used, an additional work load was placed on the section.

A further problem was created by the large number of revisions to existing salary ranges authorized during the year. As the majority of these revisions was retroactive in its application, a considerable volume of work was again created, due to the necessity of processing these revisions before other transactions could take place. In many cases, it was necessary to cancel earlier transactions and to re-process these after the salary revisions had been applied.

The introduction of the new anniversary increase procedures during the year also created much additional work, but, due to the high standard of accuracy maintained by the Records Section in its electronic data processing unit, the transition was accomplished smoothly.

The work of regional and branch personnel representatives continued successfully, and they continued to solve many minor problems by providing advice to supervisors concerning organizational matters, interpretation of the Public Service Act and Regulations, the Public Service Superannuation Act, depart-

mental directives and regulations and other related matters. Many employees were provided with counselling in the field on a variety of matters, some of a personal nature, whilst others were governed by established rules and procedures.

The field representatives were also active in the area of safety, conducting inspections of premises for hazards, special investigations of accidents and other related matters.

Certain changes in the organization of some of the branches required corresponding work by the section, in order that correct class allocations could be determined. These included the integration of the former Municipal Roads Branch into the Operations Branch.

During the period, a review of the Electronic Section of the Administration Branch was made by consultants and, as a result, changes in organization, with corresponding changes in class assignment, were discussed with the staff of the Civil Service Commission, and proposals for new and revised classes were formulated covering hitherto unestablished positions in the electronic data processing field.

Proposals made by the Department for the establishment of new classes, and revised salary ranges to be applied to them, were approved by the Commission and, as a result, the section was able to process class and salary revisions for a large number of employees which had the effect of placing the positions of these employees at the correct level, when related to other positions in the organization. One such group of positions was that represented by the Sign Painting Section in each district.

Training Section

This section is responsible for establishing and maintaining training courses as required for the improved operation of the Department.

Most of the training courses were held during the fall and winter months when the reduced construction program enabled employees to attend courses.

During the period from April 1, 1961 to March 31, 1962, the following branches conducted training courses, the number and extent of which indicates the magnitude of the Department's training program.

Branch	Number of Courses	Number of Candidates Taking Courses
Services	51	516
Planning and Design	7	152
Operations	13	299
Financial Comptroller's	2	39
Administration	1	13
Personnel	19	646
TOTAL	93	1,665

These courses provided instruction in the following Department activities:

Construction surveying, design surveying, location surveying, land surveying, draughting, estimating, inspection, automotive mechanics, safety, job evaluation, welding, Bailey bridge erection, auditing and weigh scale maintenance.

In addition to these courses promotional examinations for chainman to rodman, survey technician 1 to survey technician 2, mechanic 1 to mechanic 2, junior draughtsman to draughtsman 1, highway construction inspector 1 to highway construction inspector 2 and highway construction inspector 5 to highway construction inspector 6 were held in the district and regional offices by the Operations Branch, Planning and Design Branch and the Services Branch. A total of 313 employees attended these examinations.

The Services Branch mobile training unit was operated successfully on a schedule that allowed it to spend two weeks in each district for the training and testing of automotive mechanics. The unit was also used in the districts for training courses in accident prevention and safety.

The Supply Section conducted three Bailey bridge erection courses at regional offices. Among those attending were 24 municipal employees.

The Operations Branch, Materials and Research Section, conducted three courses for city, town, county and township employees in soils, concrete and asphalt inspection with a total of 80 municipal employees attending.

Ten courses were held to acquaint supervisors throughout the Department with the procedures and maintenance of the Job Evaluation Program being conducted by Stevenson & Kellogg Limited.

The Training Section is also responsible, under the direction of the Training Committee, for the engineers-in-training program in which selected junior professional engineers undergo a systematic job rotation program to bring them to the point of greatest usefulness to the Department in the shortest possible period of time. The fifth such program, composed of seven engineers, was completed in March 1962, and arrangements were made to start the sixth program in April 1962.

Where it is found that specialized training will be advantageous in the performance of the Department's work, subject to the approval of the Civil Service Commission, selected employees are permitted to attend specialized courses not conducted by the Department.

The Department's training program successfully produces the necessary qualified personnel and has improved the quality of work as well as the morale of the staff and has helped to reduce employee complaints and grievances.

Departmental Council System

The Departmental Council convened for ten meetings between April 1, 1961 and March 31, 1962. The Council also arranged two conferences at which the chairman of each of the Department's twenty-eight Branch Councils attended. At these conferences a general review and discussions took place on government regulations, policies, etc.

The appointing by the Minister of his representatives to the Departmental and Branch Councils took place and the annual election of employee representative(s) to the Departmental and Branch Councils was conducted in accordance with regulations made under the Public Service Act.

The active operation of the Branch Councils and the interest shown by both branch heads and employees made for a very successful year. Many varied and

sound recommendations were made and many approved at the Department, Joint Advisory Council, or Cabinet level.

The Departmental and Branch Councils, as the Deputy Minister's designated representative, heard a number of employee grievances during this period.

The Departmental Council and Branch Councils continued to be a contributing factor in the successful conducting of campaigns for the United Appeal, Cancer Society, and Canadian Red Cross Blood Clinic. The Councils also made arrangements for employees to receive polio and tetanus toxoid and other medical attention when necessary.

Safety Section

Safety Training

All districts from Kingston to Kenora were visited. Two to five day courses were held for supervisors, patrolmen, equipment operators, mechanics, regional employees, engineers-in-training, party chiefs, rodmen, chainmen, etc. Approximately 533 employees attended the various training courses.

The Safety Training courses included such subjects as protective clothing and devices, fire prevention and fire extinguishers, lifting, flares and fusees, motor vehicle driving films, posters, bulletins, supervisor accident reports, hazard reports, inspection checks, Workmen's Compensation forms.

Pamphlets relating to back-up accidents and to proper methods of traffic control were issued and discussed. Numerous other items of published material were issued and discussed. Quiz papers pertaining to the films shown were given to employees at the courses and the results together with the proper solutions of every quiz question were given.

Safety discussions were held with engineers, maintenance and construction engineers, branch, section and regional personnel.

Approximately 65 safety inspections were carried out on patrol installations.

Each month copies of the safety report, equipment accident report, cost sheets were issued.

The "Safe Driver Award" plan for accident-free operators was carried on and approximately 1,278 employees will receive an award medal.

Each district held a safe and skilled driving competition with 604 employees participating. The 18 winners plus one from Equipment Section competed at Downsview in the final run-off. The annual award banquet was attended by the Ministers and Deputy Ministers of both the Department of Highways and Transport as well as a number of heads of branches and sections.

During the year a total of 773 employees received first aid training.

MUNICIPAL ROADS DIVISION

J. P. HOWARD, P.Eng., *Municipal Engineer*

The yearly increase of Municipal expenditures since 1953 showed an unexpected lessening in 1961, with an accompanying decrease in the upward trend of subsidy payments, as shown by the figures in the following table:

Expansion of Aid to Municipalities (in $1,000's)

Year	Total Expenditure by Municipalities	Subsidies under The Highway Improvement Act	Development Road Expenditures	Total Aid
1953	$ 54,452	$27,190	$1,759	$28,949
1954	64,926	32,787	1,662	34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952
1959	124,411	62,412	7,880	70,292
1960	140,438	70,444	8,135	78,759
1961	142,010	71,542	7,786	79,328

SUBSIDIES SECTION

C. R. WILMOT, P.Eng., Subsidies Engineer

972 Municipalities and 39 Indian Reserves claimed subsidy during the year, in the aggregate amounts shown in the following table:

Corporation Status	Road Mileage	Approved Appropriations	Approved Expenditures	Subsidy
Metropolitan	322.2	$ 29,100,000.00	$ 29,162,988.01	$ 14,581,494.01
County*	9,103.7	35,133,703.00	31,210,823.16	17,179,416.16
Township†	51,328.9	50,175,457.00	44,505,542.38	24,919,087.33
Urban	8,378.3	50,010,916.00	37,130,872.81	14,862,154.63
TOTALS	69,133.1	$164,420,076.00	$142,010,226.36	$ 71,542,152.13

* Includes Suburban Road Commissions.

† Includes Improvement Districts and Indian Reserves.

METROPOLITAN TORONTO

Subsidies paid to Metropolitan Toronto for work performed on the metropolitan road system increased by almost $3,000,000 over that paid in 1960. A breakdown of the total subsidized Metro expenditure is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted)	$19,871,763.69	$ 2,026,577.54	$ 21,898,341.23
Bridges and culverts	5,639,241.39	262,786.27	5,902,027.66
Winter control	....	1,362,619.12	1,362,619.12
TOTAL APPROVED EXPENDITURES	$25,511,005.08	$ 3,651,982.93	$29,162,988.01

The following major construction works were completed or started in 1961.

Structures completed	8
Structures under construction	7
New roads completed — (Don Valley Parkway)	5.25 miles
New roads under construction (Don Valley Parkway)	2.00 "
Existing roads reconstructed (Victoria Park Ave.)	0.50 "
Pavement widening completed	6.05 "
Resurfacing of gravel roads	2.75 "
Resurfacing of pavements	9.25 "
Intersection improvements	30
Major repairs to bridges	3

COUNTY ROADS

(Part VII, The Highway Improvement Act)

Reversing the trend of previous years, 1961 subsidized expenditures on county and suburban roads systems fell almost $900,000 below those of 1960. The 1961 expenditures were as follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$16,035,532.95	$ 8,190,687.38	$24,226,220.33
Bridges and culverts	4,908,782.88	337,899.12	5,246,682.00
Winter control		1,737,920.83	1,737,920.83
Total Approved Expenditure	$20,944,315.83	$10,266,507.33	$31,210,823.16

Some understanding of the type and magnitude of the work represented by these figures can be gained from the following summary of the principal items of work performed by the counties:

Construction Items

1.	New or rebuilt gravel and stone surface	441 miles
	Low cost bituminous surfaces	164 "
	Pavements	123 "
	Completed Road Construction	728 miles
	Graded to standard cross section	347 "
2.	Bridges (10′ span and over) — Concrete, 87; Steel, 16; Timber, 2. Total	105
	Culverts (under 10′ span) — Concrete, 41; Metal Arch, 52; Wood, 1. Total	94
	Pipe culverts installed	3,851

Maintenance Items:

1.	Roadside ditching	314 miles
	Bituminous surface treatment	631 "
	Dust laying with oil	398 "
	Dust laying — calcium chloride	3,061 "
	Clay gravel stabilization	16 "
	Resurfacing — Pit-run gravel	197,688 cu. yds.
	Crushed gravel	505,291 cu. yds.
	Crushed stone	130,450 tons
2.	Winter control — Snow removal	9,070 miles
	Snow fence	1,704 "

3. Weed and brush control — By spraying	5,841	miles
By cutting	4,355	"
4. Bridges repaired	133	
Culverts repaired	380	

Tables of county and suburban road expenditures, summarized chronologically; mileages; accumulated expenditures and grants; and individual expenditures by type of work are in the appendix.

COUNTY SUBURBAN ROADS

(Part VIII, The Highway Improvement Act)

Thirty-four cities and separated towns in the Province have joined with their neighbouring counties to form Suburban Road Commissions. These commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1961 mileages, expenditures and government aid are shown below.

County	Suburban Road Commission	Mileage	Approved Expenditure	Government Subsidy
Brant	Brantford	62.10	$ 227,287.34	$ 116,107.04
Carleton	Ottawa	107.49	1,005,078.70	519,914.73
Elgin	St. Thomas	25.00	71,544.08	38,904.21
Essex	Riverside	4.00	34,335.09	17,167.55
	Windsor	49.00	306,112.21	157,246.72
Frontenac	Kingston	43.61	158,802.26	94,192.41
Grey	Owen Sound	34.70	59,576.40	30,123.41
Hastings	Belleville	14.50	50,903.46	26,254.96
Kent	Chatham	27.15	73,231.89	37,266.96
Lambton	Sarnia	25.46	233,548.33	125,155.23
Lanark	Smiths Falls	*Nil	6,457.27	3,228.63
Leeds and Grenville	Brockville	18.40	39,340.98	20,113.01
	Gananoque	8.80	14,003.98	9,643.45
	Prescott	2.90	10,828.97	6,376.03
	Smiths Falls	5.30	9,726.56	4,863.28
Lincoln	St. Catharines	47.70	191,901.26	103,791.32
Middlesex	London	65.58	344,726.34	176.059.81
Northumberland and Durham	Trenton	12.75	38,039.82	19,293.10
Ontario	Oshawa	21.70	215,604.55	113,378.96
Oxford	Ingersoll	4.50	8,019.00	4,736.67
	Woodstock	11.00	10,938.89	5,531.74
Perth	St. Mary's	6.00	8,185.64	4,092.82
	Stratford	18.55	26,620.80	14,603.79
Peterborough	Peterborough	70.00	161,489.03	84,871.74
Simcoe	Barrie	18.20	72,255.08	36,897.81
Stormont, Dundas and Glengarry	Cornwall	62.70	159,991.59	81,038.03
Waterloo	Galt	32.50	108,791.58	55,578.19
	Kitchener	61.70	257,471.99	137,237.78
	Waterloo	23.00	80,065.13	50,328.03
Welland	Niagara Falls	17.80	77,260.11	38,793.26
	Welland	15.80	78,877.08	39,710.74
Wellington	Guelph	36.00	94,315.90	59,187.67
Wentworth	Hamilton	126.10	462,097.31	234,292.56
York	Toronto-York	172.80	1,566,566.72	810,866.83
Totals		1,252.79	$6,263,995.34	$3,276,848.47

* 6.00 miles absorbed by King's Highway late 1961.

INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

The 574 townships, 19 improvement districts and 39 Indian reserves receiving aid under Part IX of the Act reduced their overall expenditures in 1961 by some $500,000. Total expenditures and aid were as follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$17,309,477.58	$17,707,230.17	$35,016,707.75
Bridges and culverts	5,235,216.90	721,012.73	5,956,229.63
Winter control		3,532,605.00	3,532,605.00
Total Approved Expenditure	$22,544,694.48	$21,960,847.90	$44,505,542.38

For the most part these expenditures resulted from the following major items of work:

Construction Items:

1.	New or rebuilt gravel and stone surfaces	727 miles
	Low cost bituminous surfaces	213 "
	Pavements	103 "
	Completed Road Construction	1,043 miles
	Graded to standard cross section	1,875 "
2.	Bridges (10′ span or over) — Concrete, 163; Steel, 22; Timber, 42. Total	227
	Culverts (under 10′ span) — Concrete, 266; Steel, 343, Timber, 142. Total	751
	Culvert pipes installed	6,920

Maintenance Items:

1.	Roadside ditching	1,872 miles
	Bituminous surface treatment	450 "
	Dust laying — oil	1,464 "
	Dust laying — calcium chloride	6,792 "
	Clay gravel stabilization	102 "
	Resurfacing — Pit-run gravel	1,297,761 cu. yds.
	Crushed gravel	2,457,840 "
	Crushed stone	398,436 "
2.	Winter control — Snowploughing	46,486 miles
	Snow fence	4,195 "
3.	Weed and brush control — By spraying	17,175 miles
	By cutting	20,374 "
4.	Bridges repaired	715
	Culverts repaired	4,454

A chronological summary of expenditures and provincial aid is shown in the appendix.

CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

Counter to the reduced expenditures on rural roads, the total 1961 expenditures of the 30 cities, 8 separated towns, 147 towns and 156 villages rose about

$200,000 over that of 1960. A summary of the 1961 expenditures is given in the following table:

	Construction	Maintenance	Total
Roads (winter control excepted)	$17,242,625.27	$12,299,456.36	$29,542,081.63
Bridges and culverts	2,340,415.91	343,787.31	2,684,203.22
Winter control	.....	4,904,587.96	4,904,587.96
Total Approved Expenditure	$19,583,041.18	$17,547,831.63	$37,130,872.81

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendix.

DIRECT EXPENDITURES SECTION

P. D. PATTERSON, P.Eng., Direct Expenditures Engineer

DEVELOPMENT ROADS

(Part XI, The Highway Improvement Act)

During the fiscal year $7,786,863.36 was expended on 153 projects involving 875.32 miles of road under designation for construction or improvement.

Forty-nine projects with a total mileage of 232.35 were completed and the regular designations numbered 22 while 3 former development roads were re-designated for further improvements.

A new category of designation for pre-engineering purposes only was initiated during this fiscal year. Funds were made available for pre-engineering and the preparation of a cost estimate for 8 of these designations. A further effective designation for actual construction is contingent on the feasibility of the proposal as shown by the cost estimate, the acquisition of the necessary property as indicated on the approved plans and the availability of funds in the Development Road Budget.

A total of 104 projects thus remained unfinished and were carried forward to the 1962 program.

Work completed during the fiscal year may be summarized as follows:

Grading	186.8 miles
Paving	139.2 "
Structures	12

Of the expenditure shown above $4,687,384.26 (60.2%) was applied to 41 county projects with the remaining $3,099,479.10 (39.8%) on 112 township projects. Locations, mileages of designations and expenditure on development roads under designation during 1961 are listed in Appendix 14.

ROADS IN UNINCORPORATED TERRITORY

(Part XII, The Highway Improvement Act)

Over a large area in the territorial districts, sparcity of population renders incorporation impractical. Under this part of the Act, aid can be rendered to

Statute Labour Boards and groups in unincorporated townships. During the year 1961 the Department co-operated with 205 Statute Labour Boards, and 295 groups of settlers on 657 projects in the improvement and maintenance of local roads. Distribution of aid by districts is listed in the following table:

SUMMARY OF EXPENDITURES IN UNINCORPORATED TOWNSHIPS

Municipal District	Value of Statute Labour on Other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10. Nipissing	$ 5,339.15	$ 13,248.40	$ 18,587.55	.71
11. Huntsville	18,590.29	17,647.14	36,237.43	.48
12. Parry Sound	75,396.23	181,158.58	256,554.81	.61
13. Nipissing	56,327.67	165,549.95	221,877.62	.74
14. Temiskaming and Cochrane South	53,997.53	170,667.59	224,665.12	.76
16. Cochrane North	62,463.83	156,178.81	218,642.64	.71
17. Sudbury	71,632.19	137,800.75	209,432.94	.65
18. Algoma	39,405.08	127,578.86	166,983.94	.76
19. Thunder Bay	55,648.07	129,775.22	185,423.29	.70
20. Kenora and Rainy River	112,102.94	178,783.37	290,886.31	.61
Totals	$550,902.98	$1,278,388.67	$1,829,291.65	.69

A summary of work performed under statute labour, voluntary contributions and Department aid follows:

Construction Items:

Clearing and grubbing	93 acres
Grade construction	82 miles
Gravel and stone surfacing	373,808 cu. yds.
Bridges (10′ span and over) — Timber, 2; Concrete, 8; Steel, 2. Total	12
Culverts (under 10′ span) — Metal Arch, 14; Timber, 29. Total	43
Culvert pipes installed	1,214

Maintenance Items:

Roadside ditching	238 miles
Brush and weed cutting	636 "
Winter control — Snowploughing	2,309 "
Snow fence	176 "
Pit-run gravel applied	355,044 cu. yds.
Crushed gravel and stone applied	24,734 "
Repaired bridges	120
Repaired culverts	764

SIDEWALK CONSTRUCTION, 1961

(Part XIII, Section 100 (4) The Highway Improvement Act)

Within the above noted section, a township may, with the approval of the Minister and the county, construct a sidewalk on a county road. The township may apply to the Department for a 50 per cent grant towards the cost when the work is completed and paid for. Payments to townships during the year under this heading were as follows:

Clarence Township, Police Villages of Clarence Creek and Bourget (County Roads Nos. 1 and 8)	$ 2,435.00

Gainsborough Township, Hamlet of Wellandport (County Road No. 17 west side)	$ 1,001.50
North Plantagenet Township, Police Village of Curran (County Road No. 1 south side)	400.00
Clarence Township, Police Village of Clarence Creek (County Road No. 1 north side)	686.51
Middleton Township, Hamlet of Courtland (County Road No. 1 east and west sides)	1,200.95
Portland Township, Hamlet of Harrowsmith (County Road No. 5)	1,500.00
South Plantagenet Township, Police Village of St. Isidore De Prescott (County Road No. 9 east and west sides)	2,203.50
Osgoode Township, Police Village of Osgoode (County Road No. 11 north and south sides)	1,602.15
Bertie Township, Summit Avenue to Dominion Road (County Road No. 8 east side)	525.00
TOTAL	$11,554.61

PLANS APPROVAL SECTION

B. R. HEAVYSEGE, P.Eng., Plans Approval Engineer

Plans and profiles for county road construction were approved on 412 miles of road. In this, the second year of county road geometric standards, plans and profiles, fulfilling all the design requirements, were approved by the district municipal engineers and only those with contentious design features required head office approval.

All development road plans and contract documents, where contracts were involved, required head office approval. A trend is being established to carry out all major development road work by contract rather than by equipment rental as has been the practice in the past.

The counties generally have co-operated in complying with the geometric standards and a vast improvement in county road construction is very apparent in the field.

APPENDIX No. 1

DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, SECONDARY HIGHWAYS, CONNECTING LINKS, DEVELOPMENT ROADS, ROADS IN UNINCORPORATED TOWNSHIPS, BY COUNTIES AND DISTRICTS

April 1st, 1961 to March 31, 1962

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway 2	$ 12,613.63	$ 99,698.03	$ 112,311.66
" 5	10,930.62	26,858.63	37,789.25
" 24	146,951.31	40,163.08	187,114.39
" 24A	.....	19,836.38	19,836.38
" 53	4,162.51	46,399.03	50,561.54
" 54	15,940.99	40,597.07	56,538.06
" 99	6,315.38	13,458.06	19,773.44
" 403	313,185.10	.....	313,185.10
Miscellaneous Surveys	Cr. 6,604.44	.....	Cr. 6,604.44
Connecting Links:			
Town of Paris	.....	218.85	218.85
	$ 503,495.10	$ 287,229.13	$ 790,724.23
Bruce:			
Highway 4	$ 101,884.21	$ 75,799.18	$ 177,683.39
" 6	72,265.00	152,109.90	224,374.90
" 9	16,551.63	78,046.95	94,598.58
" 21	87,378.92	99,974.71	187,353.63
" 86	339.06	17,890.29	18,229.35
Connecting Links:			
Town of Hanover	3,538.89	.....	3,538.89
Town of Kincardine	.....	953.69	953.69
Village of Lucknow	794.25	1,529.58	2,323.83
Village of Mildmay	.....	1,008.47	1,008.47
Town of Port Elgin	.....	1,949.05	1,949.05
Village of Teeswater	.....	1,328.89	1,328.89
Town of Walkerton	930.00	4,048.34	4,978.34
Town of Wiarton	.....	1,916.86	1,916.86
Development Road:			
Sauble Beach By-pass	60,834.49	.....	60,834.49
	$ 344,516.45	$ 436,555.91	$ 781,072.36
Carleton:			
Highway 7	$ 12,553.50	$ 62,228.19	$ 74,781.69
" 15	13,885.57	28,179.16	42,064.73
" 16	475,781.15	58,545.29	534,326.44
" 17	156,224.71	102,811.68	259,036.39
" 29	241,457.50	7,086.80	248,544.30
" 31	2,555.40	61,807.61	64,363.01
" 44	4,083.76	19,239.64	23,323.40
Ottawa Queensway	3,898,625.37	37,748.81	3,936,374.18
Miscellaneous Surveys	78,619.31	.....	78,619.31
Sidewalks:			
Village of North Gower	764.62	.....	764.62
Village of Carp	755.00	.....	755.00
Connecting Link:			
City of Ottawa	295,097.07	.....	295,097.07
Development Roads:			
Nepean Swamp Road	107,236.41	.....	107,236.41
North Gower River Road	.....	1,075.50	1,075.50
Fitzroy–Torbolton	Cr. 313.48	.....	Cr. 313.48
Herbert's Corners–Gloucester	Cr. 224.35	.....	Cr. 224.35
Carp Northerly	33,127.19	.....	33,127.19
Burritt's Rapids–County Road 26	21,742.44	.....	21,742.44

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Carleton (Cont'd):			
Malwood–County Road 20	$ 3,505.65	$	$ 3,505.65
Fitzroy Station Road	2,843.22	.....	2,843.22
	$5,348,320.04	$ 378,722.68	$5,727,042.72
Dufferin:			
Highway 9	$ 564,484.15	$ 48,813.26	$ 613,297.41
" 10	27,689.92	66,925.93	94,615.85
" 24	471.25	32,679.85	33,151.10
" 89	595.66	19,040.79	19,636.45
" 104	1,669.60	2,898.17	4,567.77
" 136	.....	1,789.74	1,789.74
Connecting Links:			
Village of Grand Valley	.....	344.55	344.55
Town of Orangeville	.....	3,134.27	3,134.27
Village of Shelburne	.....	1,402.97	1,402.97
Development Roads:			
Mount Forest–Shelburne	157.93	.....	157.93
Hornings Mills–Terranova (part)	19,578.97	.....	19,578.97
Hornings Mills Bridge	6,631.32	.....	6,631.32
County Road 3	32,042.59	.....	32,042.59
	$ 653,321.39	$ 177,029.53	$ 830,350.92
Elgin:			
Highway 3	$ 396,408.69	$ 113,499.43	$ 509,908.12
" 4	1,836.02	43,343.63	45,179.65
" 19	5,930.65	52,043.73	57,974.38
" 73	16,410.47	33,561.63	49,972.10
" 74	3,189.68	14,670.36	17,860.04
" 76	504,567.12	13,449.86	518,016.98
" 401	2,615,044.16	715.35	2,615,759.51
Miscellaneous Surveys	150.57	.....	150.57
Connecting Links:			
Town of Coldwater	1,032.80	2,618.87	3,651.67
Separate Town of Prescott	.....	2,407.22	2,407.22
Development Roads:			
Calton–Griffin's Corners	27,270.85	.....	27,270.85
County Road 39 (part)	1,289.82	.....	1,289.82
	$3,573,130.83	$ 276,310.08	$3,849,440.91
Essex:			
Highway 2	$ 12,356.03	$ 51,790.31	$ 64,146.34
" 3	3,596.90	69,712.68	73,309.58
" 3B	241,513.26	11,782.58	253,295.84
" 18	114,840.08	49,421.74	164,261.82
" 18A	3,802.98	48,372.06	52,175.04
" 39	1,076,719.16	32,840.15	1,109,559.31
" 98	2,849.11	40,295.27	43,144.38
" 107	.....	1,127.36	1,127.36
" 114	.....	1,356.55	1,356.55
" 401	836,675.23	81,916.62	918,591.85
Pelee Island	.....	12,984.57	12,984.57
Sidewalk:			
Windsor City (Tecumseh Road)	3,827.60	5.55	3,833.15
Connecting Links:			
Town of Amherstburg	.....	510.62	510.62
Village of Belle River	.....	634.94	634.94
Town of Essex	.....	504.41	504.41
Town of Harrow	.....	365.40	365.40
Town of Kingsville	5,655.43	930.96	6,586.39
Town of Leamington	.....	819.02	819.02
Town of Ojibway	.....	2,147.53	2,147.53
Town of Tecumseh	.....	520.74	520.74

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Essex (Cont'd):			
Town of Tilbury	$	$ 179.12	$ 179.12
City of Windsor	58,378.60	.....	58,378.60
	$2,360,214.38	$ 408,218.18	$2,768,432.56
Frontenac:			
Highway 2	$ 123,010.78	$ 66,090.55	$ 189,101.33
" 7	1,068,275.18	61,170.86	1,129,446.04
" 15	3,502.21	57,818.53	61,320.74
" 33	614,329.07	10,355.80	624,684.87
" 38	459,179.00	118,033.55	577,212.55
" 41	35,890.99	10,918.94	46,809.93
" 95	418.27	30,574.06	30,992.33
" 96	2,456.37	86,304.08	88,760.45
" 401	644,629.37	104,611.50	749,240.87
Secondary Highway 506	146,841.21	42,759.97	189,601.18
" " 509	103,812.08	36,551.56	140,363.64
Miscellaneous Surveys	65.46	.....	65.46
Connecting Links:			
City of Kingston	12,840.43	.....	12,840.43
Development Roads:			
North Township Road 16A	.....	1,427.96	1,427.96
Perth Road	126,780.12	.....	126,780.12
Nepean Swamp Road	106,766.63	.....	106,766.63
Snow Road–Ompah	49,726.48	.....	49,726.48
Sydenham–Otter Lake Road	18,935.01	.....	18,935.01
Crow Lake Road	17,296.68	.....	17,296.68
Plevna–Ompah	37,033.25	.....	37,033.25
Harlowe–Arden (part)	18,929.52	.....	18,929.52
Parham–Wagarville	31,083.15	.....	31,083.15
Wilson–Vennacher Road (part)	44,122.24	.....	44,122.24
Tamsworth Easterly Road	2,960.51	.....	2,960.51
Harlowe southerly to Kennebec Bdry.	.....	3,600.00	3,600.00
Bellrock Road (Cty. Road 7)	1,952.80	.....	1,952.80
	$3,670,836.81	$ 630,217.36	$4,301,054.17
Grey:			
Highway 4	$ 18,967.37	$ 84,376.00	$ 103,343.37
" 6	238,984.19	118,958.35	357,942.54
" 10	11,886.67	78,930.17	90,816.84
" 21	17,581.61	17,805.71	35,387.32
" 24	281.98	8,863.78	9,145.76
" 26	13,796.34	87,975.74	101,772.08
Sidewalk:			
Village of Ceylon	2,164.82	.....	2,164.82
Connecting Links:			
Village of Chatsworth	.....	772.36	772.36
Town of Durham	.....	2,448.64	2,448.64
Village of Flesherton	.....	9,704.79	9,704.79
Town of Hanover	.....	767.73	767.73
Village of Markdale	.....	1,260.40	1,260.40
Town of Meaford	.....	1,553.61	1,553.61
City of Owen Sound	25,842.08	.....	25,842.08
Town of Thornbury	.....	677.35	677.35
Development Roads:			
Mount Forest–Shelburne	187,311.61	.....	187,311.61
Flesherton–Singhampton	121,112.66	.....	121,112.66
Concession iv/v	59,733.31	.....	59,733.31
	$ 697,662.64	$ 414,094.63	$1,111,757.27
Haldimand:			
Highway 3	$Cr. 51,104.82	$ 128,769.89	$ 77,665.07
" 6	94,075.83	47,669.64	141,745.47

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Haldimand (Cont'd):			
Highway 54	$ 14,878.10	$ 35,855.12	$ 50,733.22
" 56	1,279.52	19,376.40	20,655.92
Miscellaneous Surveys	41.33	.....	41.33
Connecting Links:			
Town of Caledonia	.....	1,310.92	1,310.92
Village of Cayuga	.....	187.34	187.34
Town of Dunnville	36,987.43	642.42	37,629.85
Village of Hagarsville	174,590.13	494.23	175,084.36
Village of Jarvis	.....	1,768.35	1,768.35
Development Road:			
Grand River Road	66,460.93	.....	66,460.93
	$ 337,208.45	$ 236,074.31	$ 573,282.76
Halton:			
Highway 2	$ 45,759.80	$ 97,492.31	$ 143,252.11
" 5	68,026.85	74,931.76	142,958.61
" 6	5,845.37	5,031.25	10,876.62
" 7	157,252.09	38,020.30	195,272.39
" 20	500.87	747.92	1,248.79
" 25	5,072.21	76,175.84	81,248.05
" 122	.....	15,654.81	15,654.81
" 401	57,133.75	116,640.27	173,774.02
" 403	1,235,652.82	.....	1,235,652.82
Queen Elizabeth Way	270,299.03	219,892.25	490,191.28
Miscellaneous Surveys	5,727.62	.....	5,727.62
Connecting Links:			
Town of Acton	.....	456.62	456.62
Town of Burlington	.....	390.07	390.07
Town of Georgetown	.....	944.66	944.66
Town of Milton	38,039.66	750.67	38,790.33
Development Road:			
Concession i/ii Road	1,534.64	.....	1,534.64
	$1,890,844.71	$ 647,128.73	$2,537,973.44
Hastings:			
Highway 2	$ 104,702.28	$ 70,325.97	$ 175,028.25
" 7	12,453.07	71,074.33	83,527.40
" 14	12,344.36	67,834.41	80,178.77
" 28	593.01	22,691.73	23,284.74
" 33	5,163.86	32,936.08	38,099.94
" 37	37,404.49	61,719.87	99,124.36
" 41	5,055.55	.....	5,055.55
" 62	454,365.51	167,644.93	622,010.44
" 109	1,944.73	6,564.47	8,509.20
" 127	1,328.50	17,180.90	18,509.40
" 401	275,121.39	85,561.46	360,682.85
Secondary Highway 500	138,018.31	66,745.78	204,764.09
" " 502	4.32	7,918.17	7,922.49
" " 504	7.73	.....	7.73
" " 517	81.86	11,681.93	11,763.79
" " 620	61,398.99	16,387.84	77,786.83
Miscellaneous Surveys	1,525.01	.....	1,525.01
Sidewalks:			
Village of Coe Hill	975.56	.....	975.56
Village of Maynooth	62.91	.....	62.91
Hamlet of Foxborough	2,251.22	.....	2,251.22
Hamlet of Plainfield	588.54	.....	588.54
Connecting Links:			
City of Belleville	.....	4,751.68	4,751.68
Town of Deseronto	.....	239.06	239.06
Village of Madoc	.....	541.68	541.68
Village of Marmora	.....	576.19	576.19
Village of Stirling	.....	1,061.62	1,061.62

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Hastings (Cont'd):			
Town of Trenton	$ 43,190.81	$	$ 43,190.81
Village of Tweed	.....	1,069.64	1,069.64
Development Roads:			
Concession iii/iv (part)	.....	24,301.16	24,301.16
Foxboro Road (part)	Cr. 12,393.27		Cr. 12,393.27
Ridge Road	29,411.02		29,411.02
Bird's Creek–Baptiste	29,842.55	.....	29,842.55
Bannockburn–Cooper	22,267.32		22,267.32
Sulphide–Tweed	69,377.21		69,377.21
Sideroad 15/16	19,521.57		19,521.57
Concession viii (part)	Cr. 333.98		Cr. 333.98
Madoc Boundary west–Conc. vi	29,345.94	.....	29,345.94
Madoc–Foxboro (part) Co. Road 1	332,590.52	.....	332,590.52
Detlor Road (part)	20,930.76	.....	20,930.76
Concession iv/v (part)	24,934.93	.....	24,934.93
	$1,724,076.58	$ 738,808.90	$2,462,885.48
Huron:			
Highway 4	$ 132,450.21	$ 125,117.70	$ 257,567.91
" 8	1,020.74	57,245.70	58,266.44
" 9	532.88	994.87	1,527.75
" 21	895,396.50	91,620.82	987,017.32
" 23	279.65	9,568.40	9,848.05
" 81	5,677.79	20,426.41	26,104.20
" 83	3,023.52	33,270.90	36,294.42
" 84	459.26	10,634.72	11,093.98
" 86	34,740.83	60,171.61	94,912.44
" 87	292.36	34,490.95	34,783.31
Connecting Links:			
Town of Clinton	.....	1,930.33	1,930.33
Town of Exeter	.....	1,948.17	1,948.17
Town of Goderich	.....	557.26	557.26
Town of Seaforth	.....	3,222.16	3,222.16
Town of Wingham	.....	1,921.56	1,921.56
Development Road:			
Dunlop–Blyth Road	53,206.42	.....	53,206.42
	$1,127,080.16	$ 453,121.56	$1,580,201.72
Kent:			
Highway 2	$ 833,284.07	$ 96,247.39	$ 929,531.46
" 3	55,422.04	101,041.55	157,063.59
" 21	3,431.46	32,632.60	36,064.06
" 40	8,291.76	27,096.34	35,388.10
" 78	1,467.40	11,645.95	13,113.35
" 79	139.08	9,808.13	9,947.21
" 98	693.37	27,368.57	28,061.94
" 401	4,688,408.87	3,536.93	4,691,945.80
Connecting Links:			
Town of Blenheim	.....	955.48	955.48
Town of Bothwell	.....	699.52	699.52
City of Chatham	240,952.26	.....	240,952.26
Town of Dresden	.....	1,112.48	1,112.48
Town of Ridgetown	.....	687.35	687.35
Village of Thamesville	.....	272.30	272.30
Town of Wallaceburg	.....	3,654.21	3,654.21
Village of Wheatley	.....	142.91	142.91
Development Road:			
Highgate–Highway 3	25,948.13	.....	25,948.13
	$5,858,038.44	$ 317,501.71	$6,175,540.15

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lambton:			
Highway 7	$ 39,716.71	$ 96,536.92	$ 136,253.63
" 21	17,582.64	69,261.16	86,843.80
" 22	.....	2,561.71	2,561.71
" 40	92,522.01	53,360.47	145,882.48
" 79	1,492.51	62,880.21	64,372.72
" 80	64,391.42	4,037.13	68,428.55
" 82	793.37	7,111.53	7,904.90
" 402	16,951.75	21,878.58	38,830.33
Miscellaneous Surveys	32.00	.....	32.00
Sidewalk:			
Police Village of Corunna	641.58	.....	641.58
Connecting Links:			
Town of Forest	.....	618.97	618.97
Village of Thedford	36,275.94	1,343.54	37,619.48
Village of Watford	.....	589.86	589.86
Village of Wyoming	.....	19.95	19.95
Development Road:			
Alvinston-Courtright	656,176.55	.....	656,176.55
Plympton-Bosanquet	38,204.47	.....	38,204.47
	$ 964,780.95	$ 320,200.03	$1,284,980.98
Lanark:			
Highway 7	$ 31,364.15	$ 110,861.02	$ 142,225.17
" 15	21,070.66	70,797.08	91,867.74
" 29	218,795.31	37,563.45	256,358.76
" 43	17,296.73	47,936.12	65,232.85
" 44	76.74	5,029.27	5,106.01
Secondary Highway 511	7,204.97	33,857.66	41,062.63
Miscellaneous Surveys	74.11	.....	74.11
Connecting Links:			
Town of Almonte	.....	1,511.59	1,511.59
Town of Carleton Place	196,308.98	99.35	196,408.33
Development Road:			
French Line Road	.....	14,382.20	14,382.20
Lanark Elphin Road	80,793.24	.....	80,793.24
Flower Station–Darling Bdry. Road	16,194.22	.....	16,194.22
Smiths Falls–North Gower (part)	70,314.24	.....	70,314.24
Bellamy Road	3,443.59	.....	3,443.59
Fallbrook westerly	26,642.86	.....	26,642.86
Brightside–Hopetown Road	75,765.73	.....	75,765.73
Innisville Easterly Road	18,548.41	.....	18,548.41
	$ 783,893.94	$ 322,037.74	$1,105,931.68
Leeds and Grenville:			
Highway 2	$ 32,543.91	$ 142,745.43	$ 175,289.34
" 15	603,751.24	75,603.68	679,354.92
" 16	1,104.68	62,108.15	63,212.83
" 29	170.31	50,388.50	50,558.81
" 32	227,850.04	24,782.52	252,632.56
" 42	5,981.57	64,936.72	70,918.29
" 43	1,288.21	24,867.22	26,155.43
" 401	2,016,041.24	177,038.23	2,193,079.47
Hill Island Road	86.74	3,423.22	3,509.96
Miscellaneous Surveys	849.39	.....	849.39
Connecting Links:			
Village of Athens	.....	591.63	591.63
Village of Kemptville	45,639.00	38.32	45,677.32
Development Roads:			
Athens–Charleston	45,000.00	.....	45,000.00
Maynard-South Augusta Road	8,675.32	.....	8,675.32
Athena-Mallorytown Road	40,716.55	.....	40,716.55
Westport-Bedford Mills Co. Road 11 (part)	89,210.47	.....	89,210.47

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Leeds and Grenville (Cont'd):			
Lilly's Corners–Lyndhurst	$ 38,666.11	$	$ 38,666.11
Bay Road	10,878.75	.....	10,878.75
Warburton–Long Point	102,580.68	.....	102,580.68
Glen Smail westerly	18,980.66	.....	18,980.66
Highway 16 to District Hospital	3,156.68	.....	3,156.68
Highway 16 to County Road 18	376.71	.....	376.71
	$3,293,548.26	$ 626,523.62	$3,920,071.88
Lennox and Addington:			
Highway 2	$ 18,136.78	$ 73,050.86	$ 91,187.64
" 7	900.51	27,566.78	28,467.29
" 33	219,962.90	71,408.09	291,370.99
" 41	389,732.43	108,163.17	497,895.60
" 133	16,613.14	.....	16,613.14
" 401	2,840,526.99	5,832.12	2,846,359.11
Ferries	.....	90,638.78	90,638.78
Secondary Highway 500	977.19	.....	977.19
" " 502	4,879.73	15,803.29	20,683.02
Miscellaneous Surveys	6,020.49	.....	6,020.49
Connecting Link:			
Town of Napanee	.....	947.16	947.16
Development Road:			
Tamworth Centreville Road	30,131.18	.....	30,131.18
Haybay Road	27,697.06	.....	27,697.06
Wilson–Vennacher Road (part)	38,952.53	.....	38,952.53
Odessa northerly	91,347.17	.....	91,347.17
County Road 4 (part)	2,036.21	.....	2,036.21
	$3,687,914.31	$ 393,410.25	$4,081,324.56
Lincoln:			
Highway 8	$ 248,773.66	$ 82,245.74	$ 331,019.40
" 8A	28,493.40	7,804.70	36,298.10
" 20	7,138.24	63,199.40	70,337.64
" 57	.....	6,566.23	6,566.23
" 58	185,307.48	6,599.89	191,907.37
" 405	1,138,301.96	19.50	1,138,321.46
" 406	7,013.40	.....	7,013.40
Queen Elizabeth Way	6,245,990.28	165,897.66	6,411,887.94
Miscellaneous Surveys	1,078.18	.....	1,078.18
Sidewalk:			
Village of Smithville	3,045.22	.....	3,045.22
Connecting Links:			
Village of Beamsville	.....	223.10	223.10
Town of Grimsby	.....	796.67	796.67
City of St. Catharines	.....	926.30	926.30
	$7,865,141.82	$ 334,279.19	$8,199,421.01
Middlesex:			
Highway 2	$ 71,950.67	$ 130,371.19	$ 202,321.86
" 4	464,681.40	84,977.31	549,658.71
" 7	500,821.17	88,141.10	588,962.27
" 22	6,226.92	52,227.25	58,454.17
" 23	899.18	18,459.69	19,358.87
" 73	28,413.75	13,795.83	42,209.58
" 74	3,342.63	12,381.12	15,723.75
" 76	279,103.07	1,525.65	280,628.72
" 80	98,700.32	21,202.20	119,902.52
" 81	139,494.46	103,340.81	242,835.27
" 126	415,770.98	.....	415,770.98
" 135	3,104.37	6,773.84	9,878.21
" 401	427,554.37	158,860.12	586,414.49
Miscellaneous Surveys	16,727.09	.....	16,727.09

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Middlesex (Cont'd):			
Connecting Links:			
Village of Lucan	$ 150.00	$ 1,137.82	$ 1,287.82
Town of Parkhill	.....	1,608.25	1,608.25
Town of Strathroy	9,815.54	338.39	10,153.93
Development Road:			
Horseshoe Lake Road	8,830.55	.....	8,830.55
	$2,475,586.47	$ 695,140.57	$3,170,727.04
Norfolk:			
Highway 3	$ 52,789.28	$ 71,165.85	$ 123,955.13
" 6	1,309.17	18,106.50	19,415.67
" 19	198.80	10,938.60	11,137.40
" 24	7,503.96	73,399.26	80,903.22
" 59	34,231.86	11,103.00	45,334.86
Miscellaneous Surveys	9.11	.....	9.11
Connecting Links:			
Town of Delhi	.....	316.57	316.57
Town of Simcoe	.....	681.37	681.37
Development Road:			
Long Point–Park Road	.....	3,507.45	3,507.45
Courtland–Port Rowan	318,226.05	.....	318,226.05
	$ 414,268.23	$ 189,218.60	$ 603,486.83
Northumberland and Durham:			
Highway 2	$ 9,907.48	$ 168,473.13	$ 178,380.61
" 7	.....	949.23	949.23
" 7A	366,704.06	64,915.40	431,619.46
" 28	2,008.59	60,960.79	62,969.38
" 30	25,022.87	50,911.40	75,934.27
" 33	628.13	10,817.99	11,446.12
" 35	14,958.49	80,031.55	94,990.04
" 45	122,251.99	53,024.33	175,276.32
" 106	.....	6,996.55	6,996.55
" 115	14,487.70	52,041.69	66,529.39
" 401	2,257,268.70	346,662.49	2,603,931.19
Miscellaneous Surveys	1,155.31	.....	1,155.31
Connecting Links:			
Town of Bowmanville	.....	99.91	99.91
Village of Brighton	.....	166.86	166.86
Town of Campbellford	.....	398.96	398.96
Village of Colborne	.....	76.59	76.69
Village of Hastings	.....	517.18	517.18
Village of Newcastle	1,507.67	1,084.35	2,592.02
Town of Port Hope	.....	567.22	567.22
Development Road:			
Morganston–Cuff's Corners	21,081.77	.....	21,081.77
Kendal–Garden Hill	141,426.55	.....	141,426.55
P. E. Concession ii iii Road (part)	1,347.84	.....	1,347.84
P. E. Concession ii Road	1,362.74	.....	1,362.74
	$2,981,119.89	$ 898,695.62	$3,879,815.51
Ontario:			
Highway 2	$ 703,072.40	$ 75,879.45	$ 778,951.85
" 7	3,845.57	99,803.37	103,648.94
" 7A	195,431.46	10,041.11	205,472.57
" 12	890,544.35	144,234.14	1,034,778.49
" 47	8,038.12	67,858.03	75,896.15
" 48	2,769.19	22,770.02	25,539.21
" 69	31.16	42,818.24	42,849.40
" 401	1,330,117.57	200,892.46	1,531,010.03
" 404	5,447.70	.....	5,447.70
Secondary Highway 503	171.68	.....	171.68

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Ontario (Cont'd):			
Miscellaneous Surveys	$ 2,341.96	$	$ 2,341.96
Connecting Links:			
Village of Beaverton	.....	410.78	410.78
City of Oshawa	90,724.74	.....	90,724.74
Village of Port Perry	35,722.80	1,665.18	37,387.98
Town of Uxbridge	.....	1,666.09	1,666.09
Town of Whitby	.....	8,998.58	8,998.58
Development Roads:			
Manchester–Goodwood	200,523.53	.....	200,523.53
County Road 1	20,000.00	.....	20,000.00
	$3,488,782.23	$ 677,037.45	$4,165,819.68
Oxford:			
Highway 2	$ 57,929.31	$ 103,626.90	$ 161,556.21
" 3	3,266.12	12,830.71	16,096.83
" 7	1,346.25	.....	1,346.25
" 19	30,139.57	92,095.83	122,235.40
" 53	66,344.96	13,331.99	79,676.95
" 59	271,290.89	98,796.61	370,087.50
" 97	352,800.39	66,059.19	418,859.58
" 100	822.00	.....	822.00
" 401	2,631,135.51	163,299.44	2,794,434.95
" 403	532.40	.....	532.40
Miscellaneous Surveys	40.60	.....	40.60
Connecting Links:			
Sep. Town of Ingersoll	Cr. 583.72	.....	Cr. 583.72
Village of Tavistock	.....	893.94	893.94
Town of Tillsonburg	.....	2,960.00	2,960.00
City of Woodstock	11,915.48	7,748.76	19,664.24
	$3,426,979.76	$ 561,643.37	$3,988,623.13
Peel:			
Highway 2	$ 18,772.90	$ 72,078.01	$ 90,850.91
" 5	355,896.84	78,093.16	433,990.00
" 7	554,918.90	47,526.23	602,445.13
" 9	21,934.60	39,976.93	61,911.53
" 10	621,942.97	193,990.01	815,932.98
" 24	11,398.66	8,915.53	20,314.19
" 50	153,837.38	73,268.77	227,106.15
" 122	.....	7,645.39	7,645.39
" 136	2,730.76	32,660.51	35,391.27
" 401	72,303.21	116,242.02	188,545.23
" 403	60,576.52	.....	60,576.52
Queen Elizabeth Way	2,827,273.69	94,518.52	2,921,792.21
Miscellaneous Surveys	21,050.23	.....	21,050.23
Connecting Links:			
Town of Brampton	33,164.99	2,151.32	35,316.31
Village of Port Credit	2,344.24	11,268.02	13,612.26
Development Roads:			
Heart Lake Road	443.29	.....	443.29
	$4,758,589.18	$ 778,334.42	$5,536,923.60
Perth:			
Highway 7	$ 42,938.74	$ 88,567.19	$ 131,505.93
" 8	21,699.58	57,489.01	79,188.59
" 19	26,528.05	72,832.47	99,360.52
" 23	654,920.97	117,594.09	772,515.06
" 59	189,387.59	5,341.43	194,729.02
" 83	206.46	4,485.94	4,692.40
" 86	338,344.95	30,952.08	369,297.03
Connecting Links:			
Town of Listowel	55,744.40	473.67	56,218.07

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Perth (Cont'd):			
Village of Milverton	$	$ 814.41	$ 814.41
Town of Mitchell	.....	5,000.12	5,000.12
Town of Palmerston	.....	369.86	369.86
City of Stratford	98,996.18	.....	98,996.18
Development Road:			
Millbank Road	190,728.18	.....	190,728.18
	$1,619,495.10	$ 383,920.27	$2,003,415.37
Peterborough:			
Highway 7	$ 934,382.20	$ 110,007.09	$1,044,389.29
" 7A	175.37	.....	175.37
" 28	15,325.41	97,764.25	113,089.66
" 30	.....	4,512.80	4,512.80
" 36	17,335.68	33,416.24	50,751.92
" 45	537,192.21	8,851.21	546,043.42
" 115	3,969.62	868.09	4,837.71
" 121	.....	3,632.04	3,632.04
Secondary Highway 500	.....	7,206.05	7,206.05
" " 504	120,992.40	84,897.59	205,889.99
" " 507	9,753.67	33,051.42	42,805.09
Miscellaneous Surveys	1,127.91	.....	1,127.91
Connecting Links:			
Village of Lakefield	.....	1,834.37	1,834.37
Town of Norwood	.....	71.43	71.43
Development Road:			
Church Line Road	19,882.42	.....	19,882.42
Katchiwano Lake Road	17,976.69	.....	17,976.69
Hastings–Keene	299,452.16	.....	299,452.16
County Road 39 (part)	146,620.53	.....	146,620.53
	$2,124,186.27	$ 386,112.58	$2,510,298.85
Prescott and Russell:			
Highway 17	$ 229,300.67	$ 195,161.13	$ 424,461.80
" 34	1,888.05	22,447.47	24,335.52
Sidewalk:			
Village of Cumberland	1,048.50	.....	1,048.50
Connecting Links:			
Town of Hawkesbury	55,801.79	1,797.47	57,599.26
Town of Rockland	.....	2,080.37	2,080.37
Development Roads:			
Vankleek Hill westerly	57,910.78	.....	57,910.78
Rose Corners–Cambridge Bdry.	91,991.00	.....	91,991.00
Vars–Osgoode Twp. Bdry.	5,147.41	.....	5,147.41
	$ 443,088.20	$ 221,486.44	$ 664,574.64
Prince Edward:			
Highway 14	$ 520,767.74	$ 31,705.10	$ 552,472.84
" 33	41,250.41	60,981.96	102,232.37
" 41	15,615.41	19,572.76	35,188.17
Ferries	.....	90,638.78	90,638.78
Miscellaneous Surveys	11.09	.....	11.09
Development Road:			
Scoharie Road	120,097.31	.....	120,097.31
	$ 697,741.96	$ 202,898.60	$ 900,640.56
Renfrew:			
Highway 17	$1,156,670.94	$ 262,045.10	$1,418,716.04
" 29	607.91	1,236.24	1,844.15
" 41	83,426.08	127,140.78	210,566.86
" 60	221,699.07	148,557.36	370,256.43
" 62	88,620.60	58,389.55	147,010.15

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Renfrew (Cont'd):			
Highway 132	$ 142,469.06	$ 22,475.48	$ 164,944.54
Secondary Highway 500	7,909.53	.....	7,909.53
" " 508	55,519.74	59,829.00	115,348.74
" " 511	14,279.55	16,641.85	30,921.40
" " 512	401,311.12	36,640.13	437,951.25
" " 513	1,289.92	21,294.87	22,584.79
" " 515	81,749.48	26,279.05	108,028.53
" " 517	92.12	7,921.41	8,013.53
" " 521	990.34	12,569.49	13,559.83
" " 635	25.89	7,983.13	8,009.02
Miscellaneous Surveys	51.40	.....	51.40
Connecting Links:			
Town of Pembroke	.....	2,889.42	2,889.42
Town of Renfrew	.....	1,349.82	1,349.82
Development Roads:			
McGarth-Clontarf	38,485.51	.....	38,485.51
Concession vi/vii	18,791.63	.....	18,791.63
Adamston–Bagot Townline	22,269.25	.....	22,269.25
Sand Point Road	71,342.57	.....	71,342.57
Germanicus Road	40,408.27	.....	40,408.27
Highway 62–Locksley	41,743.52	.....	41,743.52
Wilno–Radcliffe Bdry	23,908.16	.....	23,908.16
Bulger's Corners–5th Line	18,499.03	.....	18,499.03
Cormac–Rochefort Road (part)	23,673.72	.....	23,673.72
	$2,555,834.41	$ 813,242.68	$3,369,077.09
Simcoe:			
Highway 9	$ 66,257.25	$ 33,901.88	$ 100,159.13
" 11	85,403.73	255,326.61	340,730.34
" 12	56,316.09	92,750.40	149,066.49
" 24	4,443.68	35,637.30	40,080.98
" 26	9,937.41	102,849.01	112,786.42
" 27	10,162.89	200,261.07	210,423.96
" 88	.....	18,476.05	18,476.05
" 89	168,409.95	42,567.30	210,977.25
" 90	21,106.70	43,810.42	64,917.12
" 91	2,918.05	25,483.33	28,401.38
" 92	192,619.79	27,289.91	219,909.70
" 93	27,830.79	55,651.70	83,482.49
" 103	194.38	9,990.45	10,184.83
" 400	119,664.79	324,218.76	443,883.55
Miscellaneous Surveys	2,881.87	.....	2,881.87
Connecting Links:			
Town of Alliston	.....	597.42	597.42
Town of Bradford	2,106.57	3,789.59	5,896.16
Village of Coldwater	.....	1,529.53	1,529.53
Town of Collingwood	.....	951.58	951.58
Town of Orillia	17,020.49	7,689.52	24,710.01
Town of Penetang	.....	16.12	16.12
Village of Port McNicoll	.....	1,061.06	1,061.06
Town of Stayner	.....	555.83	555.83
Village of Victoria Harbour	.....	3,333.64	3,333.64
Development Roads:			
Champlain Road	9,078.78	.....	9,078.78
Oro–Medonte Town Line	43,376.96	.....	43,376.96
Loretto Road	386,174.21	.....	386,174.21
River Road through Springdale	320.60	.....	320.60
Highway 26–Wasaga Beach	59,863.59	.....	59,863.59
Sideroad 5/6	5,585.58	.....	5,585.58
	$1,291,674.15	$1,287,738.48	$2,579,412.63

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Stormont Dundas and Glengary			
Highway 2	$ 19,735.72	$ 166,108.53	$ 185,844.25
" 31	23,173.35	52,861.70	76,035.05
" 34	641.47	56,774.86	57,416.33
" 43	21,364.31	103,313.47	124,677.78
" 401	5,485,699.06	54,459.28	5,540,158.34
Miscellaneous Surveys	65.08		65.08
Connecting Links:			
Town of Alexandria		1,681.47	1,681.47
City of Cornwall	29,871.91		29,871.91
Village of Winchester		1,025.79	1,025.79
Development Roads:			
Concession vi/vii	2,429.60		2,429.60
Concession iv/v	20,119.99		20,119.99
Concession vii	2,435.05		2,435.05
County Road 21	75,203.25		75,203.25
	$5,680,738.79	$ 436,225.10	$6,116,963.89
Victoria:			
Highway 7	$ 3,611.61	$ 80,320.41	$ 83,932.02
" 17	136.54		136.54
" 35	66,682.33	61,946.63	128,628.96
" 35A		2,958.87	2,958.87
" 36	17,305.56	33,854.82	51,160.38
" 46	31,728.20	57,863.61	89,591.81
" 48	8.37	1,191.68	1,200.05
" 121	2,779.84	48,887.43	51,667.27
Secondary Highway 500		7,461.68	7,461.68
" " 503	219,764.64	79,315.00	299,079.64
" " 505	367.27	21,000.52	21,367.79
Miscellaneous Surveys	12.18		12.18
Connecting Links:			
Village of Fenelon Falls		504.59	504.59
Town of Lindsay		4,887.09	4,887.09
Village of Omemee		1,055.08	1,055.08
Development Road:			
Pidgeon Lake Road	68,732.42		68,732.42
	$ 411,128.96	$ 401,247.41	$ 812,376.37
Waterloo:			
Highway 7	$ 11,897.65	$ 83,695.79	$ 95,593.44
" 8	400,714.66	19,694.96	420,409.62
" 24	4,407.27	16,691.58	21,098.85
" 24A	88.46	17,701.74	17,790.20
" 85	2,563.16	20,260.21	22,823.37
" 86	21,302.56	41,208.70	62,511.26
" 97	24,125.65	20,182.73	44,308.38
" 401	1,321,307.45	76,940.57	1,398,248.02
Sidewalk:			
Village of Baden	428.36		428.36
Connecting Links:			
Town of Elmira		961.52	961.52
City of Galt	40,344.71		40,344.71
Town of Hespeler	318.00	107.25	425.25
Town of Preston	740.49	331.04	1,071.53
	$1,828,238.42	$ 297,776.09	$2,126,014.51
Welland:			
Highway 3	$ 32,321.82	$ 93,626.81	$ 125,948.63
" 3A	15,870.85	33,965.93	49,836.78
" 3C		26,051.50	26,051.50
" 8	6,504.00	8,503.73	15,007.73
" 20	22,319.29	52,504.38	74,823.67

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Welland (Cont'd):			
Highway 57	$	$ 13,343.37	$ 13,343.37
" 58	617,638.43	44,125.94	661,764.37
" 405	152,309.85	.....	152,309.85
" 406	15,595.82	.....	15,595.82
Queen Elizabeth Way	89,176.36	173,267.03	262,443.39
Miscellaneous Surveys	35,189.00	.....	35,189.00
Connecting Links:			
Town of Fort Erie	.....	5,549.31	5,549.31
Town of Port Colborne	.....	943.48	943.48
	$ 986,925.42	$ 451,881.48	$ 1,438,806.90
Wellington:			
Highway 6	$ 156,445.17	$ 144,088.50	$ 300,533.67
" 7	1,923.37	38,668.32	40,591.69
" 9	4,651.76	99,053.98	103,705.74
" 23	185,990.43	4,888.44	190,878.87
" 24	14,669.70	50,935.92	65,605.62
" 86	14,262.74	51,127.33	65,390.07
" 87	13,555.70	12,032.02	25,587.72
" 401	94,257.35	70,836.49	165,093.84
Connecting Links:			
Village of Arthur	.....	1,075.91	1,075.91
Village of Clifford	.....	949.71	949.71
Village of Erin	.....	690.86	690.86
Town of Fergus	.....	461.61	461.61
Town of Harriston	.....	2,922.13	2,922.13
Town of Mount Forest	.....	894.62	894.62
Development Roads:			
Mount Forest–Shelburne	187,604.67	.....	187,604.67
County Road 65 (part)	39,307.04	.....	39,307.04
County Road 65	1,850.00	.....	1,850.00
	$ 714,517.93	$ 478,625.84	$1,193,143.77
Wentworth:			
Highway 2	$ 64,085.00	$ 38,936.06	$ 103,021.06
" 5	50,630.09	54,498.86	105,128.95
" 6	51,922.03	75,575.35	127,497.38
" 8	33,790.03	83,267.15	117,057.18
" 20	152,265.96	44,906.17	197,172.13
" 52	17,965.94	32,978.80	50,944.74
" 53	Cr. 7,777.39	21,903.43	14,126.04
" 55	Cr. 2,913.86	624.10	Cr. 2,289.76
" 56	21,659.50	20,933.76	42,593.26
" 97	15,435.80	23,556.84	38,992.64
" 99	11,338.35	40,888.35	52,226.70
" 102	7,037.28	9,097.27	16,134.55
" 403	2,050,273.35	.....	2,050,273.35
Queen Elizabeth Way	58,767.20	153,065.48	211,832.68
Miscellaneous Surveys	25,179.46	.....	25,179.46
Sidewalk:			
Village of Lynden	173.75	.....	173.75
Connecting Links:			
Town of Dundas	.....	135.82	135.82
City of Hamilton	195,409.31	446.21	195,855.52
	$2,745,241.80	$ 600,813.65	$3,346,055.45
York:			
Highway 2	$ 1,207.62	$ 1,071.15	$ 2,278.77
" 2A	16.53	568.73	585.26
" 5	3,229.26	6,628.20	9,857.46
" 7	797,124.31	124,166.20	921,290.51
" 9	24,860.13	9,933.33	34,793.46

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
York (Cont'd):			
Highway 11	$ 220,374.85	$ 156,767.02	$ 377,141.87
" 27	40,936.05	165.428.39	206,364.44
" 47	255,221.10	27,239.43	282,460.53
" 48	789,837.32	207,635.55	997,472.87
" 49	102.92	.....	102.92
" 50	1,409.69	16,088.10	17,497.79
" 400	832,360.46	185,742.77	1,018,103.23
" 401	2,353,155.54	386,114.56	2,739,270.10
" 403	811.65	.....	811.65
" 404	978,896.69	.....	978,896.69
Queen Elizabeth Way	353,527.32	88,736.68	442,264.00
The Queensway, Toronto	630.00	.....	630.00
Bloor Street, Toronto	864.62	.....	864.62
Miscellaneous Surveys	31,118.21	.....	31,118.21
Connecting Link:			
Town of Richmond Hill	.....	15,364.96	15,364.96
	$6,685,684.27	$1,391,485.07	$8,077,169.34
DISTRICT			
Algoma-Manitoulin:			
Highway 17	$3,417,839.58	$ 648,343.68	$4,066,183.26
" 68	42,203.06	201,011.50	243,214.56
" 101	47,472.88	2,253.71	49,726.59
" 108	178,077.04	47,952.75	226,029.79
" 129	69,974.97	185,334.12	255,309.09
Ferries	.....	95,461.36	95,461.36
Secondary Highway 538	985.16	6,499.78	7,484.94
" " 540	9,392.16	206,787.28	216,179.44
" " 542	53.50	110,420.05	110,473.55
" " 546	.....	49,209.06	49,209.06
" " 548	37,496.68	82,499.33	119,996.01
" " 550	343,501.84	22,668.88	366,170.72
" " 551	3,546.91	39,770.67	43,317.58
" " 552	6,192.50	37,839.54	44,032.04
" " 553	7,010.00	86,262.40	93,272.40
" " 554	747.85	12,166.71	12,914.56
" " 555	2,993.83	12,988.68	15,982.51
" " 556	63,534.72	55,002.41	118,537.13
" " 557	8,093.94	25,137.97	33,231.91
" " 561	19,139.61	47,047.19	66,186.80
" " 563	4,953.88	18,506.96	23,460.84
" " 565	169,173.57	5,472.84	174,646.41
" " 631	30,992.41	59,993.57	90,985.98
" " 637	142,378.12	28,102.65	170,480.77
Burwash–Killarney	1,395.00	.....	1,395.00
Sault Ste. Marie International Bridge	10,501.12	.....	10,501.12
Panel Mine Road–Elliot Lake I.D.	.....	11,855.55	11,855.55
Denison Mine Road	.....	3,793.79	3,793.79
Stanrock Mine Road	.....	21,577.11	21,577.11
Milliken Mine Road–Elliot Lake I.D.	.....	6,402.01	6,402.01
Algoma–Nordic Mine Road	.....	2,845.23	2,845.33
Missanabie–Dalton Road	11,137.67	.....	11,137.67
Hawk Junction Road, Michipicoten Twp.	.....	9,589.79	9,589.79
Miscellaneous Surveys	Cr. 16,488.53	.....	Cr. 16,488.53
Connecting Links:			
City of Sault Ste. Marie	133,889.61	.....	133,889.61
Town of Thessalon	.....	781.47	781.47
Unincorporated Townships:			
Campbell	.....	12,076.33	12,076.33
Dawson	.....	2,808.26	2,808.26
Mills	.....	2,824.15	2,824.15
Robinson	.....	8,753.37	8,753.37

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
Aberdeen	$ 4,106.77	$ 3,753.58	$ 7,860.35
Aweres	2,333.84	654.55	2,988.39
Bridgeland	.....	196.12	196.12
Cobden	.....	582.56	582.56
Deroche	.....	291.20	291.20
Fenwick	21,821.32	6,217.91	28,039.23
Galbraith	6,195.99	3,184.70	9,380.69
Gaudette	.....	1,089.26	1,089.26
Havilland	.....	1,748.77	1,748.77
Hodgins	.....	37.28	37.28
Haughton	.....	196.12	196.12
Kars	.....	1,704.16	1,704.16
Kehoe	.....	53.13	53.13
Kirkwood	.....	196.12	196.12
Lewis	.....	50.64	50.64
Montgomery	.....	844.97	844.97
Morin	1,163.62	.....	1,163.62
Parkinson	.....	7.00	7.00
Patton	.....	1,036.67	1,036.67
Pennefather	4,511.77	.....	4,511.77
Plummer	11,606.88	5,884.61	17,491.49
Ranger Lake Area	.....	7,115.25	7,115.25
Rose	.....	2,286.23	2,286.23
Shedden	6,085.30	8,403.29	14,488.59
Shields	.....	1,089.26	1,089.26
Spragge	.....	33.50	33.50
Striker	296.17	561.38	857.55
Township 130	336.25	17.26	353.51
Township 131	336.24	17.25	353.49
Township 188	.....	50.00	50.00
Vankoughnet	.....	428.90	428.90
Victoria	11,800.00	5,529.98	17,329.98
Development Road:			
Centre Line Road	18,751.82	.....	18,751.82
Fourth Line Road	23,625.11	.....	23,625.11
Fourth Line Road	1,854.49	.....	1,854.49
Spanish River Bridge	Cr. 174.21	.....	Cr. 174.21
Bar River Road	18,271.70	.....	18,271.70
	$4,879,112.14	$2,223,301.90	$7,102,414.04
Cochrane:			
Highway 11	$2,907,777.28	$ 814,504.37	$3,722,281.65
" 67	51,092.30	32,389.63	83,481.93
" 101	280,251.66	180,726.49	460,978.15
Ferries	.....	33,717.57	33,717.57
Secondary Highway 572	.....	15,249.35	15,249.35
" " 574	37,674.81	62,143.53	99,818.34
" " 575	.....	2,020.87	2,020.87
" " 576	.....	3,185.92	3,185.92
" " 577	70,736.26	32,332.94	103,069.20
" " 578	1,088.85	31,817.56	32,906.41
" " 579	39,066.88	63,295.17	102,362.05
" " 581	3,008.26	11,934.85	14,943.11
" " 583	210,854.40	83,880.48	294,734.88
" " 610	5,251.16	13,703.22	18,954.38
" " 626	68,667.71	17,876.27	86,543.98
" " 629	4,402.69	12,595.46	16,998.15
" " 631	15.49	5,105.89	5,121.38
" " 636	16,269.31	2,910.39	19,179.70
Highway 11 near Calstock–Hearst Forest Management Road	49,504.83	.....	49,504.83
Miscellaneous Surveys	111.55		111.55
Connecting Links:			
Town of Cochrane	.....	2,484.63	2,484.63

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Town of Hearst	$ 30,768.88	$ 3,661.84	$ 34,430.72
Town of Iroquois Falls	.....	1,920.34	1,920.34
Town of Matheson	.....	218.45	218.45
Town of Timmins	.....	1,663.65	1,663.65
Unincorporated Townships:			
Evelyn	.....	4,356.26	4,356.26
German	2,458.31	1,508.49	3,966.80
Godfrey	.....	1,372.03	1,372.03
Jamieson	.....	931.67	931.67
Macklem	.....	878.49	878.49
Matheson	2,458.30	1,492.86	3,951.16
Munro	.....	63.00	63.00
McCann	.....	865.57	865.57
Ogden	.....	845.65	845.65
Robb	5,985.19	1,372.01	7,357.20
Shaw	.....	3,726.14	3,726.14
Sheraton	.....	878.49	878.49
Barker	.....	137.88	137.88
Brower	1,772.77	4,770.02	6,542.79
Calder	1,529.54	3,280.90	4,810.44
Casgrain	136.09	3,110.19	3,246.28
Clute	.....	7,109.31	7,109.31
Devitt	507.61	5,634.52	6,142.13
Eilber	15,475.66	5,053.77	20,529.43
Fournier	3,312.36	3,327.29	6,639.65
Fox	.....	2,761.24	2,761.24
Hanlan	11,313.38	3,592.57	14,905.95
Idington	1,753.44	3,690.31	5,443.75
Kendal	4,196.37	11,138.70	15,335.07
Kennedy	.....	1,937.04	1,937.04
Lamarche	.....	4,873.58	4,873.58
Lowther	.....	4,458.91	4,458.91
McCrea	2,904.71	16.93	2,921.64
Nansen	1,151.66	2,065.32	3,216.98
Newmarket	5,903.87	3,831.90	9,735.77
O'Brien	9,081.19	6,454.43	15,535.62
Owens	.....	5,388.20	5,388.20
Pyne	.....	2,666.21	2,666.21
Way	.....	9,468.75	9,468.75
Williamson	.....	2,372.19	2,372.19
Development Roads:			
Dalton Road	36,051.57	.....	36,051.57
East Ford Loop	.....	30,017.02	30,017.02
	$3,882,534.34	$1,574,786.71	$5,457,321.05
Haliburton:			
Highway 28	$ 12,211.39	$ 18,171.40	$ 30,382.79
" 35	12,484.31	71,658.06	84,142.37
" 60	138,711.30	9,299.90	148,011.20
" 109	120,286.49	4,481.86	124,768.35
" 111	3,210.75	7,765.43	10,976.18
" 121	78,175.12	73,065.06	151,240.18
Secondary Highway 500	1,144.00	80,373.85	81,517.85
" " 507	.....	4,347.05	4,347.05
" " 519	180,403.14	56,274.03	236,677.17
" " 530	830.71	33,608.47	34,439.18
Miscellaneous Surveys	129.42	.....	129.42
Development Roads:			
Kushog Lake Road	17,960.12	.....	17,960.12
Horseshoe Lake Road	23,629.13	.....	23,629.13
Gooderham–Haliburton	175,553.90	.....	175,553.90
	$ 764,729.78	$ 359,045.11	$1,123,774.89

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora:			
Highway 17	$3,010,553.13	$ 325,805.03	$3,336,358.16
" 71	33,488.45	83,575.54	117,063.99
" 72	46,094.84	123,200.33	169,295.17
" 105	337,048.03	158,771.15	495,819.18
" 116	104,069.44	20,560.83	124,630.27
" 119	40,890.76	27,319.02	68,209.78
" 125	198,633.48	11,846.39	210,479.87
" 128	47,476.00	32,474.63	79,950.63
Secondary Highway 594	12,459.04	23,940.09	36,399.13
" " 596	25,591.57	55,600.71	81,192.28
" " 598	92.10	8,362.87	8,454.97
" " 599	.....	33,357.89	33,357.89
" " 601	7,873.77	19,241.22	27,114.99
" " 603	10,032.05	929.12	10,961.17
" " 604	5,437.29	18,317.13	23,754.42
" " 605	3,085.96	9,987.43	13,073.39
" " 609	5,064.42	5,001.89	10,066.31
" " 618	203,953.78	14,221.16	218,174.94
Tertiary Road 804	33.05	.....	33.05
Alcona Access Road Sioux Lookout	1,207.11	743.68	1,950.79
Miscellaneous Surveys	3,048.77	.....	3,048.77
Minaki Road south	348.90	.....	348.90
Connecting Link:			
Town of Kenora	4,805.38	1,161.43	5,966.81
Unincorporated Townships:			
Aubrey east	.....	3,463.73	3,463.73
Boys	1,088.62	579.71	1,668.33
Bradshaw	.....	19.07	19.07
Britton	.....	3,727.17	3,727.17
Colenso	.....	181.65	181.65
Drayton	.....	157.50	157.50
Drayton Reserve	.....	1,994.04	1,994.04
U. T. east of Willingdon	.....	46.69	46.69
Eton	5,710.16	4,098.70	9,808.86
Ewart	1,408.47	157.22	1,565.69
Forgie and Boys	1,088.62	63.96	1,152.58
Godson	531.68		531.68
Gundy	1,942.11	.....	1,942.11
Indian Reserve 27	.....	292.16	292.16
Indian Reserve 32A	.....	542.29	542.29
Indian Reserve 39A	1,408.48	157.21	1,565.69
Kirkup	.....	110.91	110.91
Melgund	6,350.46	3,099.51	9,449.97
Mutrie	.....	3,218.63	3,218.63
North of Buller	.....	230.59	230.59
North of Smellie	30,007.14	174.76	30,181.90
North of Umbach	.....	160.00	160.00
Pellatt	.....	3,859.89	3,859.89
Redditt	.....	1,478.45	1,478.45
Redvers	.....	3,063.04	3,063.04
Rowell	.....	319.64	319.64
Rugby	.....	3,121.36	3,121.36
Smellie	29,129.64	201.23	29,330.87
South of Pellatt	318.32	2,262.47	2,580.79
South Worth		3,252.35	3,252.35
Van Horne	5,465.29	1,849.67	7,314.96
Vermilion Additional	.....	1,162.13	1,162.13
Wabigoon	.....	3,237.79	3,237.79
Wainwright	5,743.07	905.85	6,648.92
West of Redditt	.....	330.88	330.88
Zealand	.....	7,661.68	7,661.68
	$4,191,479.38	$1,029,599.47	$5,221,078.85

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Muskoka:			
Highway 11	$ 31,745.82	$ 132,100.16	$ 163,845.98
" 35	59,046.37	44,546.54	103,592.91
" 60	60,353.75	4,051.40	64,405.15
" 69	12,208.19	59,635.94	71,844.13
" 103	5,704.62	57,166.36	62,870.98
" 118	73,610.82	63,944.17	137,554.99
" 400	19,920.07	.....	19,920.07
Secondary Highway 501	16,441.34	29,117.68	45,559.02
" " 514	20,481.43	24,695.19	45,176.62
" " 516	3,008.65	24,273.98	27,282.63
" " 525	3,491.57	1,704.13	5,195.70
" " 527	2,174.18	55,166.89	57,341.07
" " 532	192,661.52	55,361.90	248,023.42
" " 612	69,635.38	16,628.70	86,264.08
" " 632	.....	8,049.33	8,049.33
Miscellaneous Surveys	88.82	.....	88.82
Connecting Links:			
Town of Bracebridge	50,195.36	2,883.70	53,079.06
Town of Gravenhurst	.....	2,766.36	2,766.36
Town of Huntsville	1,152.95	4,098.78	5,251.73
Village of Port Carling	.....	2,758.48	2,758.48
Unincorporated Townships:			
Baxter	.....	12,160.41	12,160.41
Gibson North	.....	527.56	527.56
Gibson South	.....	2,056.68	2,056.68
Sinclair	.....	2,902.49	2,902.49
Development Roads:			
Rosseau-Huntsville Road	45,873.29	.....	45,873.29
Brackenrig Road	25,943.09	.....	25,943.09
Port Cunnington Road	39,519.78	.....	39,519.78
Huntsville–Rosseau Road (part)	61,980.25	.....	61,980.25
Huntsville-Rosseau (part)	4,349.02	.....	4,349.02
12 Mile Bay Road	4,710.31	.....	4,710.31
	$ 804,296.58	$ 606,596.83	$1,410,893.41
Nipissing:			
Highway 11	$ 175,077.77	$ 365,970.35	$ 541,048.12
" 17	188,170.64	210,162.40	398,333.04
" 60	843,795.05	127,750.73	971,545.78
" 63	73,110.56	89,725.21	162,835.77
" 64	112,074.19	127,899.83	239,974.02
" 94	854.88	13,986.00	14,840.88
" 123	109.72	12,677.58	12,787.30
" 127	323,602.94	38,375.32	361,978.26
Secondary Highway 514	340.93	.....	340.93
" " 523	114.34	26,092.22	26,206.56
" " 528	1,954.79	2,051.62	4,006.41
" " 531	.....	4,100.62	4,100.62
" " 533	34,677.95	47,186.64	81,864.59
" " 539	12,937.00	37,352.84	50,289.84
" " 539A	.....	949.25	949.25
" " 630	34,081.01	18,515.06	52,596.07
Miscellaneous Surveys	5,226.68	.....	5,226.68
Connecting Links:			
City of North Bay	.....	6,134.70	6,134.70
Town of Sturgeon Falls	.....	3,176.52	3,176.52
Unincorporated Townships:			
Airy	.....	3,712.21	3,712.21
Dickens	.....	1,161.78	1,161.78
Murchison	3,827.91	2,763.27	6,591.18
Sabine	.....	1,783.23	1,783.23
Baderow	9,824.07	4,299.26	14,123.33
Bastedo	.....	446.34	446.34
Boulter	.....	61.98	61.98

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Nipissing (Cont'd):			
Clement	$ 1,770.87	$ 62.45	$ 1,833.32
Crerar	6,668.34	2,757.24	9,425.58
Dana	.....	62.45	62.45
Falconer	.....	2,890.67	2,890.67
Gibbons	.....	3,818.14	3,818.14
Gladman	.....	74.19	74.19
Grant	.....	4,776.07	4,776.07
Hugel	11,550.05	5,254.22	16,804.27
Kirkpatrick	6,490.17	7,167.77	13,657.94
Latchford	.....	305.06	305.06
Lauder	3,174.09	278.56	3,452.65
Law	.....	6.67	6.67
Loudon	.....	2,512.11	2,512.11
MacPherson	17,706.57	10,718.96	28,425.53
Olive	.....	60.04	60.04
Pardo	.....	62.45	62.45
Pentland	793.52	69.64	863.16
Phelps	6,468.76	7,063.08	13,531.84
Poitras	1,904.18	76.57	1,980.75
Sisk	.....	41.20	41.20
Thistle	.....	121.30	121.30
Wyse	.....	13.50	13.50
Strathy	.....	87.50	87.50
Development Roads:			
Chisholm–East Ferris Boundary Road	.....	14,153.47	14,153.47
Kiosk Road	7,031.28	Cr. 353.58	6,677.70
O'Brien Street	19,324.17	.....	19,324.17
Concession vi/vii Road	.....	18,128.88	18,128.88
	$1,902,662.43	$1,226,543.57	$3,129,206.00
Parry Sound:			
Highway 11	$1,296,423.61	$ 179,578.33	$1,476,001.94
" 69	2,965,888.75	198,148.70	3,164,037.45
" 94	118.49	1,226.83	1,345.32
" 124	475,923.61	123,897.80	599,821.41
Secondary Highway 510	1,065.44	5,631.90	6,697.34
" " 518	98,154.13	96,929.73	195,083.86
" " 520	970.91	78,903.79	79,874.70
" " 522	96,336.22	106,656.14	202,992.36
" " 524	84.10	5,476.41	5,560.51
" " 526	.....	7,876.52	7,876.52
" " 529	20,214.90	73,307.61	93,522.51
" " 532	112,067.63	34,766.77	146,834.40
" " 534	198,829.63	73,140.57	271,970.20
" " 559	79.59	16,845.19	16,924.78
" " 592	23.98	12,805.02	12,829.00
" " 612	37,206.36	8,960.86	46,167.22
" " 632	.....	14,160.83	14,160.83
Miscellaneous Surveys	151.69	.....	151.69
Connecting Links:			
Town of Parry Sound	Cr. 25,077.74	4,777.39	Cr. 20,300.35
Village of Rosseau	.....	477.00	477.00
Unincorporated Townships:			
Bethune	7,145.08	5,574.00	12,719.08
Blair	566.53	753.38	1,319.91
Burpee	2,472.80	1,530.19	4,002.99
Conger	3,878.22	4,023.38	7,901.60
Croft	6,024.07	7,800.52	13,824.59
Ferguson	2,772.53	930.60	3,703.13
Ferrie	.....	1,056.14	1,056.14
Gurd	3,040.03	11,735.89	14,775.92
Hardy	3,103.55	5,982.17	9,085.72
Harrison	.....	2,107.46	2,107.46
Henvey	.....	4,244.50	4,244.50

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
Laurier	$ 9,518.45	$ 6,135.53	$ 15,653.98
Lount	7,475.24	5,364.47	12,839.71
McConkey	2,481.77	3,913.65	6,395.42
McKenzie	2,472.81	1,530.20	4,003.01
Mills	3,103.56	5,982.17	9,085.73
Monteith	3,915.27	7,347.52	11,262.79
Mowat	566.54	753.38	1,319.92
Patterson	4,938.92	3,527.10	8,466.02
Pringle	3,326.76	5,491.86	8,818.62
Proudfoot	3,850.66	3,323.31	7,173.97
Shawnaga	.....	147.90	147.90
Spence	2,717.65	4,621.26	7,338.91
Wallbridge	2,479.10	5,037.03	7,516.13
Wilson	2,481.78	3,913.65	6,395.43
Dokis Indian Reserve	.....	226.77	226.77
Development Roads:			
Balsam Road	16,400.59	.....	16,400.59
Rose Point Road	46,966.34	.....	46,966.34
Doe Lake Road	14,602.09	.....	14,602.09
Side Road 2/3 (part) Conc. ii/iii (part)	13,874.89	.....	13,874.89
Middle River Road (part)	.....	20,571.37	20,571.37
Concession ii/iii	48,316.79	.....	48,316.79
Humphry Boundary northerly	2,777.84	.....	2,777.84
Murrich–Perry East Conc. vi/vii	14,517.92	.....	14,517.92
Strong–Machar Town Line	9,853.87	.....	9,853.87
	$5,524,102.95	$1,167,192.79	$6,691,295.74
Rainy River:			
Highway 11	$2,243,037.95	$ 81,107.84	$2,324,145.79
" 71	5,825.28	37,419.45	43,244.73
Secondary Highway 600	24,866.00	43,831.93	68,697.93
" " 602	467.10	65,997.11	66,464.21
" " 611	70.15	9,626.54	9,696.69
" " 613	51,318.68	47,626.35	98,945.03
" " 615	8,549.27	32,940.98	41,490.25
" " 617	1,847.92	40,259.74	42,107.66
" " 619	3,739.69	27,768.66	31,508.35
" " 621	62,051.39	50,059.91	112,111.30
" " 622	10,504.42	12,300.73	22,805.15
" " 633	60,182.50	10,956.45	71,138.95
Miscellaneous Surveys	24,969.13	.....	24,969.13
Connecting Links:			
Town of Fort Frances	53,576.99	188.52	53,765.51
Town of Rainy River	.....	525.61	525.61
Unincorporated Townships:			
Dance	12,344.98	1,724.85	14,069.83
Dewart	2,500.00	2,276.02	4,776.02
Indian Reserve 17A	454.73	.....	454.73
Indian Reserve 18B	149.71	.....	149.71
Miscampbell	.....	3,500.00	3,500.00
Nelles	996.70	2,331.78	3,328.48
North of Dance	454.73	.....	454.73
North of Fleming	.....	83.93	83.93
Pratt	.....	342.08	342.08
Sifton	.....	3,057.87	3,057.87
Spohn	.....	2,737.32	2,737.32
Sutherland	.....	454.68	454.68
Development Road:			
Shenson–Dobie	53,839.30	.....	53,839.30
Morley/Shenston westerly	1,616.67	.....	1,616.67
	$2,623,363.29	$ 477,118.35	$3,100,481.64

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury:			
Highway 17	$ 584,164.45	$ 278,730.59	$ 862,895.04
" 64	316,795.50	82,063.60	398,859.10
" 68	859,204.10	67,736.63	926,940.73
" 69	798,627.17	177,816.56	976,443.73
" 101	553,048.56	115,586.63	668,635.19
" 129	46,493.53	61,310.47	107,804.00
Secondary Highway 528	13,608.05	14,156.03	27,764.08
" " 528A	.....	5,007.19	5,007.19
" " 535	182,862.67	90,232.60	273,095.27
" " 536	62.72	8,076.25	8,138.97
" " 537	12,759.96	31,824.12	44,584.08
" " 539	3,068.23	7,436.19	10,504.42
" " 541	7,636.83	34,027.03	41,663.86
" " 541A	4.53	3,324.84	3,329.37
" " 543	7,056.54	12,086.14	19,142.68
" " 544	149,451.16	145,832.30	295,283.46
" " 544A	.....	2,106.04	2,106.04
" " 545	4,435.79	45,953.66	50,389.45
" " 549	5,331.45	30,965.96	36,297.41
" " 553	.....	1,976.22	1,976.22
" " 560	6,499.71	68,959.25	75,458.96
" " 560A	.....	6,416.57	6,416.57
" " 566	102.39	.....	102.39
" " 606	.....	2,022.62	2,022.62
" " 607	13,500.64	11,282.93	24,783.57
" " 607A	.....	1,148.81	1,148.81
" "	12,161.00	1,266.89	13,427.89
" " 634	18,988.81	18,644.81	37,633.62
" " 637	666,088.62	25,902.83	691,991.45
Chapleau–Foleyet	3,583.00	.....	3,583.00
Miscellaneous Surveys	Cr. 500.71	.....	Cr. 500.71
Sidewalk:			
Police Village of Noelville	921.26	.....	921.26
Connecting Links:			
Town of Capreol	.....	1,936.20	1,936.20
City of Sudbury	455,770.20	.....	455,770.20
Unincorporated Townships:			
Afton	.....	31.24	31.24
Allen	.....	781.24	781.24
Bigwood	6,129.82	7,780.48	13,910.30
Cherriman	.....	161.17	161.17
Davis	.....	348.54	348.54
Delamere	7,724.71	5,177.70	12,902.41
Hoskin	.....	1,543.59	1,543.59
Haddo	.....	1,077.64	1,077.64
Henry	.....	655.88	655.88
Janes	10,990.11	348.54	11,338.65
McNish	1,770.86	62.45	1,833.31
Scollard	.....	1,388.67	1,388.67
Foleyet	.....	9.37	9.37
Noble	.....	953.11	953.11
Togo	.....	953.11	953.11
Awrey	4,585.39	300.91	4,886.30
Broder	8,645.78	13,150.88	21,796.66
Burwash	5,023.22	3,185.74	8,208.96
Cartier	.....	222.97	222.97
Cascaden	.....	250.00	250.00
Cleland	13,941.16	3,335.24	17,276.40
Curtin	168.80	127.44	296.24
Dieppe	.....	174.80	174.80
Dill	733.30	3,088.86	3,822.16
Dryden	8,689.53	3,210.97	11,900.50
Eden	.....	597.98	597.98
Fairbank	.....	654.93	654.93
Foster	.....	3,050.61	3,050.61

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Hawley	$	$ 316.75	$ 316.75
Hendrie	.....	486.82	486.82
Lorne	903.43	6,612.00	7,515.43
Loughrin	2,927.18	2,794.88	5,722.06
Louise	.....	5,201.41	5,201.41
Lumsden	.....	125.21	125.21
MacLennan	.....	1,303.94	1,303.94
Merritt	.....	2,519.44	2,519.44
Mongowin	.....	1,343.00	1,343.00
Norman	2,500.00	.....	2,500.00
Rathbun	.....	565.49	565.49
Scadding	.....	1,319.48	1,319.48
Secord	2,982.00	1,898.21	4,880.21
Servos	253.96	838.41	1,092.37
Street	.....	1,884.96	1,884.96
Tilton	124.92	1,219.19	1,344.11
Trill	.....	79.45	79.45
McKinnon	2,174.96	624.01	2,798.97
Shakespeare	.....	924.09	924.09
Development Road:			
Spanish River Bridge	392,034.36	.....	392,034.36
River Road	23,593.09	.....	23,593.09
Webbwood Bridge and approaches	49,583.07	.....	49,583.07
3 Bridges Conc. ii, iii and iv	4,345.15	.....	4,345.15
Vermilion Bridge westerly	111,983.69	.....	111,983.69
Montee–Rouleau Road	20,414.63	.....	20,414.63
Warren St.–Charles Road	.....	14,026.82	14,026.82
	$5,403,949.28	$1,450,537.58	$6,854,486.86
Temiskaming:			
Highway 11	$1,121,144.71	$ 183,135.18	$1,304,279.89
" 65	193,588.90	181,575.77	375,164.67
" 66	271,929.23	131,093.87	403,023.10
" 101	41,007.14	26,622.55	67,629.69
" 112	34,559.92	25,975.85	60,535.77
Secondary Highway 558	34,607.61	25,721.26	60,328.87
" " 560	99,704.51	183,371.47	283,075.98
" " 562	35,660.66	19,585.84	55,246.50
" " 564	.....	16,369.24	16,369.24
" " 566	15,816.49	22,767.24	38,583.73
" " 567	.....	35,867.32	35,867.32
" " 569	.....	1,946.20	1,946.20
" " 569	11,000.00	51,619.92	62,619.92
" " 570	.....	9,112.70	9,112.70
" " 571	4,932.43	6,614.01	11,546.44
" " 573	10,351.49	29,544.49	39,895.98
" " 624	7,428.06	50,155.49	57,583.55
Matachewan westerly from Highway 566	39,476.04	.....	39,476.04
Englehart Management Unit Road	36,192.73	.....	36,192.73
Miscellaneous Surveys	170.43	.....	170.43
Connecting Links:			
Town of Cobalt	.....	3,636.32	3,636.32
Town of Haileybury	.....	7,150.23	7,150.23
Town of New Liskeard	6,206.89	6,911.30	13,118.19
Township of Teck	748.31	700.11	1,448.42
Unincorporated Townships:			
Argyle	.....	22.58	22.58
Alma	.....	1,969.58	1,969.58
Barber	.....	691.46	691.46
Bayly	.....	965.32	965.32
Beauchamp	.....	7,810.18	7,810.18
Benoit	.....	773.83	773.83
Blair	.....	2,305.36	2,305.36
Bryce	.....	299.71	299.71

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Temiskaming (Cont'd):			
Cane	$	$ 5,285.32	$ 5,285.32
Catherine	569.25	665.66	1,234.91
Charters	1,150.54	.....	1,150.54
Corkhill	1,179.25	49.39	1,228.64
Eby	.....	2,453.49	2,453.49
Firstbrook	.....	447.79	447.79
Gillies	.....	75.00	75.00
Grenfell	.....	1,083.85	1,083.85
Haultain	.....	44.11	44.11
Henwood	4,359.35	8,598.44	12,957.79
Ingram	5,160.12	9,915.48	15,075.60
Jessop	.....	1,434.72	1,434.72
Keefer	.....	3,014.72	3,014.72
Lawson	1,150.56	.....	1,150.56
Lebel	.....	3,699.83	3,699.83
Lorrain	.....	844.45	844.45
Maisonville	.....	973.84	973.84
Marquis	8,656.97	3,086.64	11,743.61
Marter	7,394.70	4,289.82	11,684.52
McEvoy	.....	865.57	865.57
McFadden	.....	482.40	482.40
Nicol	.....	300.00	300.00
Nordica	.....	865.57	865.57
Ossian	.....	977.70	977.70
Otto	3,415.58	9,180.27	12,595.85
Pacaud	569.26	3,566.12	4,135.38
Pense	.....	2,270.36	2,270.36
Robillard	3,793.46	7,009.50	10,802.96
Savard	5,237.60	2,709.86	7,947.46
Sharpe	2,683.09	4,018.49	6,701.58
South Lorrain	.....	295.30	295.30
Tudhope	.....	761.21	761.21
Township 91	.....	49.39	49.39
Development Road:			
Goodfish Road	13,983.10	.....	13,983.10
Third Street, Elk Lake	3,410.34	.....	3,410.34
Hornings Mills Bridge	20,342.77	.....	20,342.77
Black River Bridge and approaches	.....	17,653.48	17,653.48
	$2,047,581.49	$1,131,282.15	$3,178,863.64
Thunder Bay:			
Highway 11	$1,472,145.37	$ 478,903.78	$1,951,049.15
" 11A	.....	56,549.07	56,549.07
" 17	3,495,902.62	330,402.59	3,826,305.21
" 17A	52.83	.....	52.83
" 61	567,426.45	64,482.68	631,909.13
" 130	4,546.23	31,761.47	36,307.70
Secondary Highway 580	26,832.73	12,186.98	39,019.71
" " 582	2,033.98	3,220.39	5,254.37
" " 584	27,934.96	58,320.97	86,255.93
" " 585	348.08	53,624.10	53,972.18
" " 586	215.30	2,464.66	2,679.96
" " 587	15,235.59	35,095.60	50,331.19
" " 588	40,356.65	61,414.17	101,770.82
" " 589	60,243.01	44,143.97	104,386.98
" " 590	3,568.06	60,722.12	64,290.18
" " 591	20.29	7,600.06	7,620.35
" " 593	3,352.97	11,350.45	14,703.42
" " 595	18,178.42	53,261.94	71,440.36
" " 597	40.30	11,606.83	11,647.13
" " 599	57,010.86	51,777.85	108,788.71
" " 608	39,750.73	30,542.85	70,293.58
" " 614	89,921.32	64,439.87	154,361.19
" " 625	35,935.84	21,975.39	57,911.23

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Secondary Highway 627	$ 100.00	$ 5,384.70	$ 5,484.70
" " 628	12.59	3,204.31	3,216.90
Savant Lake south to Sturgeon River	.....	315.20	315.20
Turer Lake Road	.....	2,833.56	2,833.56
Port Arthur, Fort William Ring Road	107.95	.....	107.95
Road to Northern Lights Lake	49,405.32	.....	49,405.32
Miscellaneous Surveys	1,710.56	.....	1,710.56
Connecting Link:			
City of Fort William	.....	11,316.81	11,316.81
Town of Geraldtown	2,154.09	4,745.26	6,899.35
City of Port Arthur	46,220.11	10,083.16	56,303.27
Unincorporated Townships:			
Armstrong	.....	1,996.88	1,996.88
Boucher (unsurveyed territory S.W. of)	.....	28.00	28.00
Conacher	.....	26.25	26.25
Dawson Road Lots	3,455.86	4,755.30	8,211.16
Devon	3,750.00	2,391.84	6,141.84
Forbes	2,478.69	5,369.64	7,848.33
Fowler	2,948.64	5,621.46	8,570.10
Fridegh	43.00	.....	43.00
Goldie	985.20	1,583.68	2,568.88
Gorham	5,377.58	14,956.29	20,333.87
Hardwick	.....	1,370.43	1,370.43
Jacques	.....	3,455.03	3,455.03
Jackfish	448.00	110.25	558.25
Joynt and Inwood	.....	107.82	107.82
Kilkenny	1,827.66	1,523.29	3,350.95
Leduc (unsurveyed)	.....	13.13	13.13
Lybster	4,661.40	2,349.11	7,010.51
Lyons	987.33	2,525.36	3,512.69
Marks	1,794.02	3,606.26	5,400.28
McTavish west (unsurveyed)	.....	12.13	12.13
North Shore–Lake Shebandowan	.....	5.25	5.25
Northwest of Ames	.....	101.94	101.94
Pearson	1,861.49	5,871.10	7,732.59
Pic	.....	38.73	38.73
Rossport	501.56	69.96	571.52
Scoble	1,694.96	3,808.77	5,503.73
Sibley–unsurveyed territory south of	.....	7.00	7.00
Sibley	3,192.64	3,466.15	6,658.79
South and east of Ames	.....	1,700.00	1,700.00
Stirling	4,766.72	1,964.44	6,731.16
Strange	.....	3,303.12	3,303.12
Upsala	1,355.69	1,760.83	3,116.52
Ware	3,032.38	10,712.96	13,745.34
Development Road:			
Maplewood Avenue	19,435.03	.....	19,435.03
	$ 6,125,361.06	$ 1,668,343.19	$ 7,793,704.25
COUNTY AND DISTRICT TOTALS	$128,163,019.42	$31,465,334.91	$159,628,354.33
Sundry Unallocated District Office, Administrative, Engineering, Building, Inventory Charges, etc.	$ 2,677,489.19	$ 5,675,734.49	$ 8,353,223.68
TOTAL EXPENDITURES	$130,840,508.61	$37,141,069.40	$167,981,578.01

APPENDIX No. 2

DEPARTMENT EXPENDITURES BY HIGHWAYS

April 1st, 1961 to March 31st, 1962

Highway No.	Location	Mileage	Construction	Maintenance	Total
King's Highways					
2	Quebec Border–Windsor	437.7	$2,129,068.38	$1,453,985.27	$3,583,053.65
2A	Jct. Hwy. 401–Jct. Hwy. 2	1.3	16.53	568.73	585.26
3	Fort Erie–Windsor	246.9	492,700.03	591,246.92	1,083,946.95
3A	Hwy. 3 (Chambers Corners)–Jct. Hwy. 8 and Q.E.W.	22.8	15,870.85	33,965.93	49,836.78
3B	Hwy. 3–Windsor	4.7	241,513.26	11,782.58	253,295.84
3C	Hwy. 3 (Fort Erie)–Ridgeway	7.1	.....	26,051.50	26,051.50
4	Port Stanley–Hwy. 10 (Flesherton)	133.1	719,819.21	413,613.82	1,133,433.03
5	Hwy. 27 (Toronto)–Hwy. 2 (Paris)	54.6	488,713.66	241,010.61	729,724.27
6	Port Dover–Tobermory	202.1	620,846.76	561,539.49	1,182,386.25
7	Hwy. 15 (Perth)–Hwy. 402 (Sarnia)	452.3	4,175,324.98	1,229,303.33	5,404,628.31
7A	Peterborough–Hwys. 7 and 12 (Manchester)	30.7	562,310.89	74,956.51	637,267.40
8	Niagara Falls–Goderich [7]	99.0	712,502.67	308,446.29	1,020,948.96
8A	Queenston Bridge–Hwy. 8 (St. Davids)	2.7	28,493.40	7,804.70	36,298.10
9	Hwy. 27 (Schomberg) Hwy. 21 (Kincardine)	98.2	699,272.40	310,721.20	1,009,993.60
10	Port Credit–Owen Sound	89.3	661,519.56	339,846.11	1,001,365.67
11	Toronto–Sec. Hwy. 623 (Rainy River)	1,111.7	9,553,131.09	2,647,393.64	12,200,524.73
11A	Port Arthur–Hwys. 11 and 17 (Sistonens Corners)	20.5	.....	56,549.07	56,549.07
12	Whitby–Hwy. 27 (Midland) [7]	72.6	946,860.44	236,984.54	1,183,844.98
14	Hwy. 33 (Bloomfield)-Hwy. 7 (Marmora)	41.5	533,112.10	99,539.51	632,651.61
15	Hwy. 2 (Barriefield)-Hwy. 15 (Stittsville) [7]	71.9	642,209.68	232,398.45	874,608.13
16	Hwy. 2 (Johnstown)–Ottawa	54.8	476,885.83	120,653.44	597,539.27
17	Quebec Border–Manitoba Border [11]	1,305.3	12,239,016.11	2,353,462.20	14,592,478.31
18	Leamington–Windsor	39.9	114,840.08	49,421.74	164,261.82
18A	Hwy. 18 (Kingsville)–Hwy. 18	19.4	3,802.98	48,372.06	52,175.04
19	Port Burwell–Hwy 86 (Tralee)	70.0	63,619.07	227,910.63	291,529.70
20	Niagara Falls–Hwy. 2 (Burlington)	41.1	182,224.36	161,357.87	343,582.23
21	Hwy. 3 (Morpeth)–Owen Sound	183.2	1,021,371.13	311,295.00	1,332,666.13
22	Hwy. 4 (Masonville)–Hwy. 7	28.5	6,226.92	54,788.96	61,015.88
23	Hwy. 7–Hwy. 9 (Teviotdale)	56.6	842,090.23	150,510.62	992,600.85
24	Port Dover–Collingwood	102.6	190,127.81	267,286.30	457,414.11
24A	Paris–Galt	9.7	88.46	37,538.12	37,626.58
25	Hwy. 2 (Campbells Corners)–Hwy. 7	22.0	5,072.21	76,175.84	81,248.05
26	Barrie–Owen Sound	64.8	23,733.75	190,824.75	214,558.50
27	Queen Elizabeth Way–Penetang	82.8	51,098.94	365,689.46	416,788.40
28	Port Hope–Hwy. 62 (Bancroft)	87.9	30,138.40	199,588.17	229,726.57
29	Brookville–Hwy. 17 (Arnprior) [15]	52.3	461,031.03	96,274.99	557,306.02
30	Hwy. 2 (Brighton)–Hwy. 7 (Havelock)	29.5	25,022.87	55,424.20	80,447.07
31	Hwy. 2 (Morrisburg)–Ottawa	40.9	25,728.75	114,669.31	140,398.06
32	Hwy. 2–Hwy. 15	12.2	227,850.04	24,782.52	252,632.56
33	Kingston–Hwy. 14	79.7	881,334.37	186,499.92	1,067,834.29
34	Hwy. 2 (Lancaster)–Hwy. 17 (Hawkesbury)	34.8	2,529.52	79,222.33	81,751.85

Highway No.	Location	Mileage	Construction	Maintenance	Total
35	Hwy. 401–Hwy. 11B (Huntsville)	135.0	$ 153,171.50	$ 258,182.78	$ 411,354.28
35A	Hwy. 121–Hwy. 35	2.0	.....	2,958.87	2,958.87
36	Hwy. 7–Hwy. 28 (Burleigh Falls)	46.5	34,641.24	67,271.06	101,912.30
37	Hwy. 401 (Belleville)–Hwy. 7 (Actinolite)	26.3	37,404.49	61,719.87	99,124.36
38	Hwy. 401–Hwy. 7	45.1	459,179.00	118,033.55	577,212.55
39	Hwy. 2–Windsor	20.8	1,076,719.16	32,840.15	1,109,559.31
40	Chatham–Sarnia	42.9	100,813.77	80,456.81	181,270.58
41	Hwy. 33–Pembroke	141.3	529,720.46	265,795.65	795,516.11
42	Hwy. 29 (Forthton)–Westport [29]	32.0	5,981.57	64,936.72	70,918.29
43	Hwy. 34 (Alexandria)–Hwy. 31	89.7	39,949.25	176,116.81	216,066.06
44	Hwy. 17 (Carp)–Hwy. 29	11.5	4,160.50	24,268.91	28,429.41
45	Hwy. 401 (Cobourg)–Hwy. 7	33.5	659,444.20	61,875.54	721,319.74
46	Hwy. 7–Hwy. 35 (Coboconk)	34.0	31,728.20	57,863.61	89,591.81
47	Hwy. 48 (Ringwood)–Hwys. 7 and 12	21.3	263,259.22	95,097.46	358,356.68
48	Hwy. 401 (Toronto)–Hwy. 46 [12]	58.2	792,614.88	231,597.25	1,024,212.13
49	Kleinburg–Hwy. 50	3.2	102.92	.....	102.92
50	Metro Toronto N. Limits–Hwy. 9	19.7	155,247.07	89,356.87	244,603.94
52	Hwy. 2 (Alberton) Wentworth/Wellington Cty. Line	15.4	17,965.94	32,978.80	50,944.74
53	Hwy. 20–Hwy. 2 (Eastwood)	27.3	62,730.08	81,634.45	144,364.53
54	Hwy. 3 (Cayuga)– Hwy. 2 (Cainsville)	25.3	30,819.09	76,452.19	107,271.28
55	Hamilton–Hwy. 53	2.1	Cr. 2,913.86	624.10	Cr. 2,289.76
56	Hwy. 3–Hwy. 53	14.6	22,939.02	40,310.16	63,249.18
57	Hwy. 3A Hwy. 20 (Bismark)	8.9	.....	19,909.60	19,909.60
58	Hwy. 3–Thorold	12.5	802,945.91	50,725.83	853,671.74
59	Long Point Park–Shakespeare	63.6	494,910.34	115,241.04	610,151.38
60	Hwy. 17–Huntsville	134.4	1,264,559.17	289,659.39	1,554,218.56
61	Pigeon River–Fort William	38.9	567,426.45	64,482.68	631,909.13
62	Hwy. 7 (Madoc)–Quebec Border	118.1	542,986.11	226,034.48	769,020.59
63	North Bay–Temiskaming	38.7	73,110.56	89,725.21	162,835.77
64	Hwy. 69–Hwy. 11 (Marten River)	85.7	428,869.69	209,963.43	638,833.12
65	Quebec Border Matachewan	80.5	193,588.90	181,575.77	375,164.67
66	Quebec Border Hwy. 65	61.5	271,929.23	131,093.87	403,023.10
67	Sec. Hwy. 578–Hwy. 101	20.9	51,092.30	32,389.63	83,481.93
68	South Baymouth–Hwy. 17	87.9	901,407.16	268,748.13	1,170,155.29
69	Hwy. 12–Sec. Hwy. 545 [11]	204.0	3,776,755.27	478,419.44	4,255,174.71
71	Fort Frances–Hwy. 17 (Longbow Corners) [11]	102.2	39,313.73	120,994.99	160,308.72
72	Hwy. 17 (Dinorwic)–Sioux Lookout	43.5	46,094.84	123,200.33	169,295.17
73	Port Bruce–Dorchester	22.6	44,824.22	47,357.46	92,181.68
74	Hwy. 3 (New Sarum)–Nilestown	13.9	6,532.31	27,051.48	33,583.79
76	Hwy. 3 (Eagle)–Hwy. 2	11.5	783,670.19	14,975.51	798,645.70
78	Hwy. 21 (Dresden)–Wallaceburg	10.4	1,467.40	11,645.95	13,113.35
79	Hwy. 2–Hwy. 7	28.8	1,631.59	72,688.34	74,319.93
80	Hwy. 2 (Strathburn)–Hwy. 79	17.7	163,091.74	25,239.33	188,331.07
81	Hwy. 2–(Delaware)–Hwy. 21 (Grand Bend)	38.6	145,172.25	123,767.22	268,939.47
82	Hwy. 2–Hwy. 21	5.5	793.37	7,111.53	7,904.90
83	Hwy. 23 (Russeldale)–Hwy. 2 (Brewster)	24.1	3,229.98	37,756.84	40,986.82
84	Hwy. 3 (Hensall)–Hwy. 21 (St. Joseph)	10.7	459.26	10,634.72	11,093.98
85	Waterloo–Hwy. 86 (Elmira)	7.3	2,563.16	20,260.21	22,823.37

Highway No.	Location	Mileage	Construction	Maintenance	Total
86	Hwy. 7–Hwy. 21 (Amberley)..	78.6	$ 408,990.14	$ 201,350.01	$ 610,340.15
87	Hwy. 9–Hwy. 86 (Bluevale)....	19.6	13,848.06	46,522.97	60,371.03
88	Hwy. 11–Hwy. 27 (Bondhead)	5.5	.....	18,476.05	18,476.05
89	Hwy. 27 (Cookstown)–Hwy. 10 (Primrose).....	21.8	169,005.61	61,608.09	230,613.70
90	Barrie–Vespra, Innisfil Twp. Line.....	11.3	21,106.70	43,810.42	64,917.12
91	Hwy. 26–Hwy. 24 (Duntroom)	5.1	2,918.05	25,483.33	28,401.38
92	Hwy. 27–Wasaga Beach.....	8.8	192,619.79	27,289.91	219,909.70
93	Hwy. 11–Hwy. 27 (Waverly)..	17.5	27,830.79	55,651.70	83,482.49
94	Hwy. 11B (Callander)–Hwy. 17.....	5.9	973.37	15,212.83	16,186.20
95	Hornes Point–Hwy. 96 (Wolf Island).....	7.1	418.27	30,574.06	30,992.33
96	Quebec Head–End of Wolf Island.....	20.4	2,456.37	86,304.08	88,760.45
97	Hwy. 6 (Freelton)–Hwy. 19....	39.3	392,361.84	109,798.76	502,160.60
98	Hwy. 3 (Blenheim)–Hwy. 2 (Windsor).....	55.1	3,542.48	67,663.84	71,206.32
99	Dundas–Hwy. 24.....	16.9	17,653.73	54,346.41	72,000.14
101	Quebec Border–Hwy. 17 (Wawa).....	153.4	921,780.24	325,189.38	1,246,969.62
102	Hwy. 2 (Hamilton)–Hwy. 8 (Dundas).....	2.2	7,037.28	9,097.27	16,134.55
103	Hwy. 12 (Waubaushene)–Hwy. 69 (Footes Bay).....	29.9	5,899.00	67,156.81	73,055.81
104	Hwy. 9–Grand Valley.....	1.8	1,669.60	2,898.17	4,567.77
105	Hwy. 17 (Vermilion Bay)–Red Lake.....	111.0	337,048.03	158,771.15	495,819.18
106	Hwy. 28 (Dale)–Hwy. 2 (Welcome).....	2.6	.....	6,996.55	6,996.55
107	Hwy. 18–Hwy. 3 (Ruthven)....	1.0	.....	1,127.36	1,127.36
108	Hwy. 17–Quirke Lake.....	26.0	178,077.04	47,952.75	226,029.79
109	Hwy. 28–Sec. Hwy. 500.....	15.9	122,231.22	11,046.33	133,277.55
111	Dyno Mine–Sec. Hwy. 500.....	6.8	3,210.75	7,765.43	10,976.18
112	Hwy. 11–Hwy. 66.....	12.4	34,559.92	25,975.85	60,535.77
114	Hwy. 3 (Maidstone)–Hwy. 98..	1.2	.....	1,356.55	1,356.55
115	Hwy. 401–Peterborough [35]..	17.1	18,457.32	52,909.78	71,367.10
116	Hwy. 72 (Patricia Corners)–Hudson.....	10.4	104,069.44	20,560.83	124,630.27
118	Hwy. 35–Hwy. 69 (Glen Orchard).....	47.4	73,610.82	63,944.17	137,554.99
119	Hwy. 17 (Dryden)–Richan.....	13.9	40,890.76	27,319.02	68,209.78
121	Tory Hill– Hwy. 35.....	64.2	80,954.96	125,584.53	206,539.49
122	Hwy. 2–Queen Elizabeth Way..	3.8	.....	23,300.20	23,300.20
123	Hwy. 11–North Bay Airport....	4.5	109.72	12,677.58	12,787.30
124	Hwy. 69–Hwy. 11 (Sundridge)	50.5	475,923.61	123,897.80	599,821.41
125	Hwy. 105–Cochenour Mine....	7.7	198,633.48	11,846.39	210,479.87
126	Hwy. 401–London.....	3.9	415,770.98	.....	415,770.98
127	Hwy. 62 (Maynooth)–Hwy. 60	26.8	324,931.44	55,556.22	380,487.66
128	Kenora–Redditt.....	17.7	47,476.00	32,474.63	79,950.63
129	Hwy. 17–Chapleau.....	139.6	116,468.50	246,644.59	363,113.09
130	Port Arthur–Hwy. 61.....	17.8	4,546.23	31,761.47	36,307.70
132	Hwy. 41–Renfrew.....	17.8	142,469.06	22,475.48	164,944.54
133	Hwy. 28–Hwy. 7.....	1.9	16,613.14	.....	16,613.14
135	Hwy. 401–Hwy. 2.....	3.8	3,104.37	6,773.84	9,878.21
136	Hwy. 24–Orangeville.....	7.8	2,730.76	34,450.25	37,181.01
400	Hwy. 401–Hwy. 12.....	73.7	971,945.32	509,961.53	1,481,906.85
401	Hwy. 34 (Lancaster)–Hwy. 3B (Windsor).....	378.5	29,946,379.76	2,150,159.91	32,096,539.67
402	Hwy. 7–Bluewater Bridge.....	4.0	16,951.75	21,878.58	38,830.33
403	Hwy. 27 (Toronto)–Hwy. 401 (Woodstock).....	.....	3,661,031.84	.....	3,661,031.84
404	Extension of Don Valley Parkway.....	.....	984,344.39	.....	984,344.39
405	Q.E.W.–Queenston, Lewiston International Bridge.....	.....	1,290,611.81	19.50	1,290,631.31

Highway No.	Location	Mileage	Construction	Maintenance	Total
406	Welland to St. Catharines	.....	$ 22,609.22	$	$ 22,609.22
451	Fort Erie–Toronto	93.3	9,845,033.88	895,377.62	10,740,411.50
453	Queensway, Toronto	.....	630.00	.....	630.00
454	Bloor Street, Toronto	.....	864.62	.....	864.62
Total Expenditure Allocated to King's Highways			$106,853,623.04	$24,749,480.63	$131,603,103.67
Secondary Highways					
500	Hermon–Hwy. 36 (Bobcaygeon)	87.7	$ 148,049.03	$ 161,787.36	$ 309,836.39
501	Hwy. 103–Honey Harbour	9.2	16,441.34	29,117.68	45,559.02
502	Hwy. 2 (Napanee)–Hwy. 2 (Marysville)	8.7	4,884.05	23,721.46	28,605.51
503	Hwy. 46 (Kirkfield)–Hwy. 121 (Kinmount)	48.8	219,936.32	79,315.00	299,251.32
504	Sec. Hwy. 620–Hwy. 28	16.3	121,000.13	84,897.59	205,897.72
505	Hwy. 46–Sec. Hwy. 503	12.7	367.27	21,000.52	21,367.79
506	Hwy. 41–Plevna	22.1	146,841.21	42,759.97	189,601.18
507	Hwy. 36–Gooderham	25.5	9,753.67	37,398.47	47,152.14
508	Burnstown–Black Donald Mine	24.0	55,519.74	59,829.00	115,348.74
509	Hwy. 7–Snow Road	13.1	103,812.08	36,551.56	140,363.64
510	Sec. Hwy. 520–Hwy. 124	1.9	1,065.44	5,631.90	6,697.34
511	Brightside–Sec. Hwy. 508 (Calabogie)	20.5	21,484.52	50,499.51	71,984.03
512	Hwy. 41 (Eganville)–Hwy. 60	29.4	401,311.12	36,640.13	437,951.25
513	Hwy. 132 (Dacre)–Hyndford	10.2	1,289.92	21,294.87	22,584.79
514	Hwy. 35–Interlaken	10.0	20,822.36	24,695.19	45,517.55
515	Quadeville–Hwy. 62 (Combermere)	17.4	81,749.48	26,279.05	108,028.53
516	Port Sidney–Windermere	17.3	3,008.65	24,273.98	27,282.63
517	Hwy. 62–New Carlow	10.4	173.98	19,603.34	19,777.32
518	Kearney–Hwy. 69	47.0	98,154.13	96,929.73	195,083.86
519	Hwy. 121–Red Stone Lake	34.0	180,403.14	56,274.03	236,677.17
520	Hwy. 11–Ardberg	33.6	970.91	78,903.79	79,874.70
521	Hwy. 62 (South of Round Lake –North of Round Lake)	13.2	990.34	12,569.49	13,559.83
522	Hwy. 11 (Trout Creek)–Loring	38.2	96,336.22	106,656.14	202,992.36
523	Hwy. 60 (Madawaska)–Cross Lake	13.5	114.34	26,092.22	26,206.56
524	Sec. Hwy. 522–Sec. Hwy. 534	3.1	84.10	5,476.41	5,560.51
525	Gravenhurst–Muskoka Lake Sanitarium	1.5	3,491.57	1,704.13	5,195.70
526	Hwy. 69–Britt	2.3	.....	7,876.52	7,876.52
527	Hwy. 118 (Baysville)–Hwy. 11B (Huntsville)	14.5	2,174.18	55,166.89	57,341.07
528	Hwy. 64–Wolseley Bay	8.3	15,562.84	16,207.65	31,770.49
528A	Sec. Hwy. 528–Pine Grove Landing	3.3	.....	5,007.19	5,007.19
529	Hwy. 69–Bayfield Wharf	16.3	20,214.90	73,307.61	93,522.51
530	Sec. Hwy. 519–Hwy. 35	12.5	830.71	33,608.47	34,439.18
531	Hwy. 17–Bonfield	2.4	.....	4,100.62	4,100.62
532	Hwy. 11–Hwy. 69	40.9	304,729.15	90,128.67	394,857.82
533	Hwy. 17 (Mattawa)–Hwy. 63	34.8	34,677.95	47,186.64	81,864.59
534	Hwy. 11B (Powassan)–Restoule	22.1	198,829.63	73,140.57	271,970.20
535	Hwy. 64 (Noelville)–Riviere Veuve	31.1	182,862.67	90,232.60	273,095.27
536	Hwy. 17–Creighton Mine	3.8	62.72	8,076.25	8,138.97
537	Hwy. 69–Hwy. 17 (Wanapitei)	13.8	12,759.96	31,824.12	44,584.08
538	Hwy. 17 East and West of Algoma	3.5	985.16	6,499.78	7,484.94
539	Hwy. 17 (Warren)–Hwy. 64 (Field)	26.4	16,005.23	44,789.03	60,794.26

Highway No.	Location	Mileage	Construction	Maintenance	Total
539A	Sec. Hwy. 539–River Valley	.8	$	$ 949.25	$ 949.25
540	Hwy. 68 (Little Current)–Meldrum Bay	82.3	9,392.16	206,787.28	216,179.44
541	Hwy. 17 (Sudbury)–Skead	14.7	7,636.83	34,027.03	41,663.86
541A	Sec. Hwy. 541–Falconbridge	1.5	4.53	3,324.84	3,329.37
542	Hwy. 68–Sec. Hwy. 540 (Gore Bay)	43.0	53.50	110,420.05	110,473.55
543	Hwy. 69 (Sudbury)–5.1 miles south	5.1	7,056.54	12,086.14	19,142.68
544	Sudbury–Geneva Lake Mine	61.1	149,451.16	145,832.30	295,283.46
544A	Sec. Hwy. 544 (Onaping)–Levack	1.3	.....	2,106.04	2,106.04
545	Sec. Hwy. 541–Milnet	17.0	4,435.79	45,953.66	50,389.45
546	Hwy. 17–Mount Lake	49.8	.....	49,209.06	49,209.06
548	Hwy. 17–St. Joseph Island Rd.	45.6	37,496.68	82,499.33	119,996.01
549	Lake Panache–Hwy. 17	9.1	5,331.45	30,965.96	36,297.41
550	Hwy. 17 (Sault Ste. Marie)–Gros Cap	11.3	343,501.84	22,668.88	366,170.72
551	Sec. Hwy. 540 (West Bay)–Providence Bay	12.2	3,546.91	39,770.67	43,317.58
552	Island Lake–Goulais Bay	12.4	6,192.50	37,839.54	44,032.04
553	Hwy. 17 (Massey)-Richie Falls Camp	50.2	7,010.00	88,238.62	95,248.62
554	Hwy. 129–Sec. Hwy. 546	10.9	747.85	12,166.71	12,914.56
555	Sec. Hwy. 557–Granary Lake Landing	7.0	2,993.83	12,988.68	15,982.51
556	Hwy. 17 (Heyden)–Christiana Mine	26.3	63,534.72	55,002.41	118,537.13
557	Hwy. 17 (Blind River)–Matinenda Lake	13.5	8,093.94	25,137.97	33,231.91
558	Hwy. 11 (Haileybury)–Montreal River	16.8	34,607.61	25,721.26	60,328.87
559	Nobel–Shawanaga	13.5	79.59	16,845.19	16,924.78
560	Hwy. 11 (Englehart)–Gogama	144.5	106,204.22	252,330.72	358,534.94
560A	Sec. Hwy. 560–Westree	6.2	.....	6,416.57	6,416.57
561	Hwy. 17 (Mines)–Ophir	12.8	19,139.61	47,047.19	66,186.80
562	Hwy. 11–Hwy. 65	8.2	35,660.66	19,585.84	55,246.50
563	Hwy. 17–Batchawana Bay	3.4	4,953.88	18,506.96	23,460.84
564	Hwy. 112 (Tarzwell)– Blanche River	9.8	.....	16,369.24	16,369.24
565	Sec. Hwy. 550–Pte. Aux Pins	3.5	169,173.57	5,472.84	174,646.41
566	Hwy. 65 (Matachewan)–Ashley Mine	15.6	15,918.88	22,767.24	38,686.12
567	Hwy. 11 (North Cobalt)–Silver Centre	21.7	.....	35,867.32	35,867.32
568	Hwy. 11–Kenogami	1.0	.....	1,946.20	1,946.20
569	Hwy. 11- Hwy. 11 (Englehart)	17.5	11,000.00	51,619.92	62,619.92
570	Hwy. 11–Sesekinika	2.6	.....	9,112.70	9,112.70
571	Sec. Hwy. 562–Hwy. 11 (Earlton)	3.8	4,932.43	6,614.01	11,546.44
572	Hwy. 11 (Ramore)–Holtyre	5.0	.....	15,249.35	15,249.35
573	Hwy. 11–Sec. Hwy. 560 (Charlton)	12.5	10,351.49	29,544.49	39,895.98
574	Norembega–Sec. Hwy. 579	18.0	37,674.81	62,143.53	99,818.34
575	Hwy. 101 (Night Hawk Centre) to 3 miles south	3.0	.....	2,020.87	2,020.87
576	Hwy. 101–1.9 miles west	1.9	.....	3,185.92	3,185.92
577	Hwy. 101 (Shillington)–Hwy. 67 (Ansonville)	15.8	70,736.26	32,332.94	103,069.20
578	Hwy. 11 (Nellie Lake)–Hwy. 67 (Iroquois Falls)	5.1	1,088.85	31,817.56	32,906.41
579	Hwy. 11–Gardiner	21.8	39,066.88	63,295.17	102,362.05
580	Hwy. 11–DHO Park (Lake Nipigon)	7.7	26,832.73	12,186.98	39,019.71
581	Hwy. 11–Remi Lake	3.1	3,008.26	11,934.85	14,943.11

Highway No.	Location	Mileage	Construction	Maintenance	Total
582	Hwys. 11 and 17 (Hurkett)–Hwys. 11 and 17	4.0	$ 2,033.98	$ 3,220.39	$ 5,254.37
583	Mead-Lac Ste. Therese	30.1	210,854.40	83,880.48	294,734.88
584	Hard Rock Mine–Nakina	42.5	27,934.96	58,320.97	86,255.93
585	Hwys. 11 and 17–Pine Portage	22.9	348.08	53,624.10	53,972.18
586	Hwy. 11–3.3 miles west	3.3	215.30	2,464.66	2,679.96
587	Hwys. 11 and 17–Silver Islet	22.6	15,235.59	35,095.60	50,331.19
588	Hwys. 11 and 17–Round Lake Road	34.8	40,356.65	61,414.17	101,770.82
589	Hwys. 11A and 17A–Dog Lake Road	18.7	60,243.01	44,143.97	104,386.98
590	Hwy. 130–Sec. Hwy. 595	25.1	3,568.06	60,722.12	64,290.18
591	Sec. Hwy. 589–4.9 miles north	4.9	20.29	7,600.06	7,620.35
592	Hwy. 11 (Novar)–Hwy. 11	9.8	23.98	12,805.02	12,829.00
593	Sec. Hwy. 588–Silver Mount Road	11.9	3,352.97	11,350.45	14,703.42
594	Dryden–Hwy. 17	22.6	12,459.04	23,940.09	36,399.13
595	Sec. Hwy. 590–Cloud Lake Rd.	28.0	18,178.42	53,261.94	71,440.36
596	Hwy. 17 (Keewatin)–Pellatt–Hwy. 17	16.5	25,591.57	55,600.71	81,192.28
597	Sec. Hwy. 595–Sec. Hwy. 608	6.8	40.30	11,606.83	11,647.13
598	Sec. Hwy. 604–Hwy. 128	2.7	92.10	8,362.87	8,454.97
599	Savant Lake–Pickle Crow Mine	112.1	57,010.86	85,135.74	142,146.60
600	Hwy. 71–Hwy. 11 (Rainy Riv.)	59.8	24,866.00	43,831.93	68,697.93
601	Hwy. 17 (Dryden)–Hwy. 17 (Dryden)	16.5	7,873.77	19,241.22	27,114.99
602	Hwys. 11 and 71 (Fort Frances) to Hwys. 11 and 71 (Emo)	29.1	467.10	65,997.11	66,464.21
603	Hwy. 17–Dyment	2.8	10,032.05	929.12	10,961.17
604	Kenora–Hwy. 128	15.5	5,437.29	18,317.13	23,754.42
605	Hwy. 17–Rugby Lake	7.7	3,085.96	9,987.43	13,073.39
606	Hwy. 17–Markstay	1.0	.....	2,022.62	2,022.62
607	Hwy. 64–French River	7.4	13,500.64	11,282.93	24,783.57
607A	Sec. Hwy. 607–Hwy. 69	.4	.....	1,148.81	1,148.81
608	Hwy. 61 (Moose Hill)–Sec. Hwy. 595	11.9	39,750.73	30,542.85	70,293.58
609	Hwy. 105–Clay Lake Landing	10.1	5,064.42	5,001.89	10,066.31
610	Hwy. 67–Hwy. 101	12.6	5,251.16	13,703.22	18,954.38
611	Sec. Hwy. 602–8.0 miles north of Hwys. 11 and 71	12.5	70.15	9,626.54	9,696.69
612	Hwy. 69 (Footes Bay)–Hwy. 69 (Gordon Bay)	7.0	106,841.74	25,589.56	132,431.30
613	Sec. Hwy. 602–Lake Despair Landing	25.5	51,318.68	47,626.35	98,945.03
614	Hwy. 17–Manitouwadge	37.1	89,921.32	64,439.87	154,361.19
615	Hwy. 71–Lake Despair	14.4	8,549.27	32,940.98	41,490.25
616	Hwy. 101–Palomar CNR	2.0	12,161.00	1,266.89	13,427.89
617	Hwy. 11 (Stratton)–Sec. Hwy. 600	14.4	1,847.92	40,259.74	42,107.66
618	Hwy. 105–Madson	8.8	203,953.78	14,221.16	218,174.94
619	Hwy. 11 (Pinewood)–Sec. Hwy. 621	25.3	3,739.69	27,768.66	31,508.35
620	Hwy. 62–Sec. Hwy. 504 (Apsley)	26.1	61,398.99	16,387.84	77,786.83
621	Hwy. 11(Sleeman)–Lake of the Woods Dock	32.5	62,051.39	50,059.91	112,111.30
622	Hwy. 11–5.3 miles north	5.3	10,504.42	12,300.73	22,805.15
624	Hwy. 11 (Englehart)–Hwy. 66 (Larder Lake)	27.0	7,428.06	50,155.49	57,583.55
625	Caramat–Hwy. 11	20.0	35,935.84	21,975.39	57,911.23
626	Hwy. 11 (Matheson)–Hwy. 11 (Porquis Jct.)	19.8	68,667.71	17,876.27	86,543.98
627	Hwy. 11–Heron Bay	5.2	100.00	5,384.70	5,484.70
628	Hwy. 17–Red Rock	4.4	12.59	3,204.31	3,216.90
629	Hwy. 101–Timmins Airport	6.7	4,402.69	12,595.46	16,998.15

Highway No.	Location	Mileage	Construction	Maintenance	Total
630	Hwy. 17 (Eau Claire)–Kiosk	18.5	$ 34,081.01	$ 18,515.06	$ 52,596.07
631	Hornepayne–Hwy. 11	46.6	31,007.90	65,099.46	96,107.36
632	Sec. Hwy. 532 (Rosseau)–Hwy. 118 (Port Carling)	16.0	.....	22,210.16	22,210.16
633	Hwy. 11–Kawene	3.7	60,182.50	10,956.45	71,138.95
634	Hwy. 69 (Val Caron)–Sec. Hwy. 544	12.0	18,988.81	18,644.81	37,633.62
635	Hwy. 17–Ottawa River	1.6	25.89	7,983.13	8,009.02
636	Hwy. 11–Frederickhouse Sta.	2.0	16,269.31	2,910.39	19,179.70
637	Killarney–Burwash	3.7	808,466.74	54,005.48	862,472.22
Total Expenditure Allocated to Secondary Highways			$6,065,476.20	$5,123,525.63	$11,189,001.83
Tertiary Road					
804	Hwy. 105, south of Ear Falls, westerly	12.8	33.05	.....	33.05
	Ferries		.....	310,456.49	310,456.49
	Queensway, Ottawa		3,898,625.37	37,748.81	3,936,374.18
	Pelee Island		.....	12,984.57	12,984.57
	Burwash–Killarney		1,395.00	.....	1,395.00
	Hill Island Road		86.74	3,423.22	3,509.96
	Chapleau–Foleyet		3,583.00	.....	3,583.00
	Savant Lake south–Sturgeon River		.....	315.20	315.20
	Durer Lake Road (Terrier Lake)–Anaconda		.....	2,833.56	2,833.56
	Sault Ste. Marie International Bridge		10,501.12	.....	10,501.12
	Port Arthur, Fort William Ring Road		107.95	.....	107.95
	Algoma Access Road–Sioux Lookout		1,207.11	743.68	1,950.79
	Panel Mine Road–Elliot Lake I.D.		.....	11,855.55	11,855.55
	Denison Mine Road–Elliot Lake I.D.		.....	3,793.79	3,793.79
	Stanrock Mine Road–Elliot Lake I.D.		.....	21,577.11	21,577.11
	Millikan Mine Road–Elliot Lake I.D.		.....	6,402.01	6,402.01
	Algoma–Nordic Mine Road–Elliot Lake I.D.		.....	2,845.33	2,845.33
	Hwy. 11 (Calstock)–Hearst Forest Management Unit Road		49,504.83	.....	49,504.83
	Northern Lights Lake Road		49,405.32	.....	49,405.32
	Missanabie–Dalton		11,137.67	.....	11,137.67
	Matachewan westerly from Sec. Hwy. 566		39,476.04	.....	39,476.04
	Englehart Management Unit Road		36,192.73	.....	36,192.73
	Hawk Junction Road–Michipicoten Township		.....	9,589.79	9,589.79
	Minaki Road south		348.90	.....	348.90
	Sidewalks		17,648.94	5.55	17,654.49
	Miscellaneous Surveys		243,157.34	.....	243,157.34
	Connecting Links		2,657,620.38	293,762.63	2,951,383.01
	Unincorporated Township Roads		566,889.04	711,499.63	1,278,388.67
	Development Roads		7,656,999.65	162,491.73	7,819,491.38
HIGHWAY TOTALS			$128,163,019.42	$31,465,334.91	$159,628,354.33
	Sundry Unallocated District Office, Administrative, Engineering, Building, Inventory Charges, etc.		2,677,489.19	5,675,734.49	8,353,223.68
TOTAL EXPENDITURES			$130,840,508.61	$37,141,069.40	$167,981,578.01

[ ] Indicates two highways share the same route; mileage for the section shared is shown against the bracketed highway.

APPENDIX No. 3

SCHEDULE OF CONTROLLED ACCESS HIGHWAYS

April 1, 1961 to March 31, 1962

Hwy. No.		Designated by Ontario Regulation Number	Mileage
3	New Sarum By-pass		
	Twp. of Yarmouth	342/61	0.57
7	Twp. of Madoc and in the Village of Madoc	360/61	3.40
7	Bathurst Street		
	Twp. of Vaughan	342/61	1.23
11	Tri-Town By-pass		
	Twp. of Bucke	359/61	6.37
11	North Bay By-pass		
	Twp. of West Ferris	70/61	3.28
14	Rossmore By-pass	17/62	
	Mountain View By-pass		3.23
	Twp. of Ameliasburgh		0.93
15	Twp. of Goulbourn	386/61	6.10
16	Manotick Diversion		
	Twp. of North Gower	342/61	2.14
17	Sault Ste. Marie Northerly	41/62	
	Twp. of Tarentorus		1.28
	Twp. of Aweres		5.28
	Twp. of Vankoughnet		2.74
	Twp. of Fenwick		2.67
	Twp. of Havilland		3.56
	Twp. of Fisher		1.76
17	Longbow Corners		
	Twp. of Kirkup	361/61	0.76
17	Western Entrance to Ottawa		
	Twp. of Nepean	40/62	1.80
17	Wawa By-pass	259/61	
	Twp. 30, Range 22		1.00
	Twp. 29, Range 23		1.50
	Twp. 30, Range 23		3.60
	White River By-pass		
	Twp. of Hunt		1.58
17	Mattawa By-pass		
	Twp. of Papineau	17/62	5.64
17	Carp to Antrim	342/61	
	Twp. of Huntley		5.72
	Twp. of Fitzroy		4.29
33	Consecon By-pass	342/61	
	Twp. of Ameliasburgh		0.60
	Twp. of Hillier		0.82
60	Barry's Bay Diversion		
	Twp. of Sherwood	17/62	1.91
61	Pigeon River Bridge Approach		
	Twp. of Pardee	278/61	2.76

Hwy. No.		Designated by Ontario Regulation Number	Mileage
101	Cook's Lake Diversion Twp. of Mountjoy	38/62	2.12
400	Northwest Entrance Extension	342/61	
	Twp. of York		0.86
	Twp. of North York		2.00
401	Highbury Avenue Extension Twp. of Westminster and City of London	17/62	0.72
404	Don Valley Parkway Extension	175/61	
	Twp. of Markham		9.09
	Twp. of Whitchurch		9.09
	Twp. of East Gwillimbury		0.27
Q.E.W.	Toronto to Fort Erie Twp. of Clinton	357/61	5.95
	Interchange		
16	Hwy. 2 — Twp. of Edwardsburgh	342/61	
401	Toronto to Quebec Renforth Drive — Twp. of Etobicoke	358/61	
	County Road 14 — Twp. of Southwold Twp. of Dunwich		
	Hwy. 76 — Twp. of Aldborough		
	Furnival Road — Twp. of Aldborough		
	County Road 15 — Twp. of Howard Twp. of Harwick		
	Hwy. 21 — Twp. of Howard	17/62	
Q.E.W.	Cushman Road — Twp. of Grantham	357/61	
	Lake Street — Twp. of Grantham and City of St. Catharines		
Total Mileage as of March 31, 1962			1,420.03
Total Mileage Designated During Fiscal Year Ending March 31, 1962			106.62

APPENDIX No. 3A

SCHEDULE OF DESIGNATIONS AND RE-DESIGNATIONS OF SECTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1962

This schedule includes:

1. Designations of (a) Newly assumed highways.
   (b) Newly constructed highways and diversions.
   (c) Interchanges.
2. Re-Designations of widened highways.

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2494-2	Aweres	Aug. 3/61	556	2.890
	P-8023	Aweres	June 22/61	552	1.900
	P-2263-3	Fenwick	Sept. 7/61	552	3.900
	P-2974-16	Hunt	May 11/61	17 T.C.	9.390
	P-8021	Vankoughnet	July 13/61	552	5.500

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Bruce	P-2654-18	Eastnor	Mar. 23/61	6	11.820
Carleton	P-1666-11	Fitzroy	Oct. 18/61	17	4.290
	P-1770-11	Huntley	Oct. 18/61	17	5.720
	P-1591-57	Nepean	June 22/61	16	2.060
	P-1870-40	Nepean	Nov. 9/61	17	1.800
	P-1590-23	North Gower	June 22/61	16	2.140
Cochrane	P-7072	Carr	May 25/61	626	4.060
	P-2242-34	Carr and Bowman	Sept. 7/61	11 and 101	6.230
	P-7074	Clergue	June 22/61	626	7.130
	P-3123-35	Clergue	Sept. 14/61	11	7.920
	P-8029	Clute	July 20/61	636	2.000
	P-2697-18	Mountjoy	Nov. 2/61	101	2.120
	P-7075	Taylor	June 22/61	626	6.000
	P-3109-24	Taylor	Dec. 14/61	11	7.970
	P-3111-4	Walker	May 11/61	11	0.890
	P-7073	Walker	May 18/61	626	2.300
Dundas	P-6020	Mountain and Winchester	July 20/61	43	11.500
	P-1769-14	Winchester	Sept. 7/61	31	1.800
Elgin	P-3161-48	Aldborough	Mar. 23/61	401	Interchange
	P-3161-49	Aldborough	Mar. 23/61	401	Interchange
	P-3160-37	Dunwich	Mar. 23/61	401	Interchange
	P-3159-33	Southwold	Mar. 23/61	401	Interchange
	P-2058-65	Yarmouth	Mar. 29/61	3	0.570
Grenville	P-1825-15	Edwardsburgh	May 11/61	2	0.080
	P-6019	South Gower, Oxford and Wolford	July 20/61	43	15.000
Haliburton	P-2738-17	Cardiff	June 22/61	500	2.420
	P-7081	Glamorgan	July 20/61	507	5.000
Halton	P-2070-130	Nelson	Sept. 14/61	Q.E.W.	8.300
	P-1939-143	Trafalgar	Sept. 21/61	Q.E.W.	9.500
Hastings	P-1949-26	Madoc	Aug. 3/61	7	3.400
Huron	P-3258-6	Hay and Stephen	May 11/61	83	12.940
Kenora	P-3205-2	Bradshaw	Nov. 2/61	17 T.C.	5.380
	P-2192-22	Eton	Jan. 11/62	17 T.C.	6.000
	P-3204-1	Hodgson	Mar. 23/61	17 T.C.	6.800
	P-3195-1	Hyndman	Nov. 2/61	17 T.C.	0.720
	P-2180-29	Melgund	Nov. 2/61	17 T.C.	6.070
	P-2223-13	Sanford	Nov. 9/61	17 T.C.	6.000
	P-2331-48	Southworth	Nov. 23/61	17 T.C.	10.820
	P-2325-53	Unsurveyed Territory	Nov. 9/61	17 T.C.	1.000
	P-2109-71	Zealand	Jan. 11/62	17 T.C.	11.670
Kent	P-3167-44	Harwich	Mar. 29/61	401	Interchange
	P-3168-32	Howard	Mar. 29/61	401	Interchange
	P-3168-33	Howard	Sept. 21/61	401	Interchange
Lambton	P-2887-8	Euphemia and Brooke	Mar. 29/61	79	7.940
Lanark	P-2007-61	Drummond	Nov. 2/61	7	0.780
	P-6018	Montague	July 20/61	43	10.500
Leeds	P-1787-17	Leeds	Oct. 12/61	32	0.680
Lennox and Addington	P-3173-86	Ernestown	Jan. 11/62	401	0.240

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Lincoln	P-2115-59	Clinton	Sept. 14/61	Q.E.W.	Interchange
	P-2141-114	Grantham	Sept. 14/61	Q.E.W.	Interchange
	P-2141-115	Grantham	Sept. 14/61	Q.E.W.	Interchange
	P-2141-117	Grantham	Sept. 14/61	Q.E.W.	4.280
Middlesex	P-2538-24	Adelaide and East Williams	Mar. 1/62	81	8.500
	P-2672-42	Lobo	Mar. 1/62	22	4.030
	P-2661-23	Mosa, Ekfrid and Metcalfe	Apr. 27/61	80	8.360
	P-3298-11	Westminster	Apr. 20/61	135	3.500
Muskoka	P-2119-76	Chaffey	June 15/61	11	4.750
	P-7065	Chaffey	Mar. 29/61	592	0.280
	P-7080	Medora	July 20/61	632	10.000
Nipissing	P-7077	Calvin, Lauder and Pentland	July 20/61	630	19.000
	P-2108-37	Papineau	Nov. 9/61	17	5.640
	P-2123-25	Gillies Limit	Mar. 23/61	11	4.330
Northumberland	P-1638-18	Murray	Apr. 20/61	2	5.110
Ontario	P-1667-9	Brock	Sept. 7/62	7	4.410
	P-2269-12	Uxbridge	Mar. 15/62	47	10.450
Parry Sound	P-7067	Carling	Apr. 20/61	559	8.380
	P-7079	Humphry	July 20/61	632	6.500
	P-7068	McDougall	Apr. 20/61	559	0.100
	P-7064	Perry	Mar. 23/61	592	9.420
	P-7066	Shawanaga	Apr. 27/61	559	4.500
	P-2289-56	Strong	Mar. 23/61	11	3.370
Peel	P-1573-38	Caledon	Aug. 24/61	10	12.460
	P-1709-7	Toronto Gore	June 22/61	7	3.030
	P-1954-57	Toronto	Sept. 7/62	2	5.190
Peterborough	P-1901-27	Asphodel	Nov. 23/61	7	9.600
	P-1902-23	Belmont	Dec. 14/61	7	8.650
	P-1789-78	Otonabee	Feb. 15/62	7	9.500
Prince Edward	P-1508-42	Ameliasburgh	Sept. 7/61	14	3.230
	P-1508-44	Ameliasburgh	Nov. 9/61	14	0.930
	P-2050-7	Ameliasburgh	May 18/61	33	0.600
Rainy River	P-3148-8	Schwenger	Nov. 23/61	622	1.090
Renfrew	P-6021	Admaston, Bromley and Wilberforce	July 20/61	60	17.000
	P-2617-39	Sherwood	Nov. 9/61	60	0.380
Simcoe	P-1426-43	Innisfil	Dec. 14/61	11	12.200
Sudbury	P-7078	Balfour, Blezard and Rayside	July 20/61	634	12.000
Temiskaming	P-2555-16	Bucke	Aug. 3/61	11	6.370
	P-3365-2	Bucke	Aug. 3/61	558	0.650
	P-2236-26	Dymond	Apr. 20/61	11	3.330
	P-2814-21	McGarry	Mar. 23/61	66	5.750
	P-2815-16	McVittie and Hearst	Mar. 29/61	66	6.930
Thunder Bay	P-2163-4	Eighty	Dec. 7/61	17 T.C.	7.340
	P-3140-4	Knowles	Mar. 29/61	17 T.C.	0.790
	P-2623-3	Nipigon	July 20/61	628	3.800
	P-3274-3	Seventy-three	June 1/61	614	0.650
	P-3065-3	Seventy-six	Mar. 23/61	17 T.C.	1.550
	P-2306-4	Seventy-eight	Apr. 20/61	17 T.C.	7.550

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Victoria	P-1527-15	Mariposa	Mar. 23/61	7	8.770
Welland	P-2425-86	Stamford	Sept. 14/61	Q.E.W.	2.530
Wentworth	P-2070-137	Nelson	Mar. 1/62	Q.E.W.	Interchange
	P-2113-195	Saltfleet	Sept. 14/61	Q.E.W.	5.800
	P-2113-208	Saltfleet	Dec. 7/61	Q.E.W.	Interchange
York	P-2948-85	Etobicoke	Mar. 23/61	401	Interchange
	P-1900-54	King	Jan. 11/62	7	8.160
	P-1658-65	Markham	Sept. 7/61	7	10.250
	P-5026-1	Vaughan	Apr. 20/61	7	1.230
	P-2735-8	Whitchurch	Dec. 21/61	7	3.630

APPENDIX No. 3B

SCHEDULE OF REVERSIONS AND TRANSFERS OF SECTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1962

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2254-19	Day	Sept. 2/61	17 T.C.	1.000
	P-2400-24	Gladstone	April 1/62	17 T.C.	0.170
	P-2424-37	Tarentorus	April 1/62	17 T.C.	1.100
	P-2253-50	Thessalon	April 1/62	17 T.C.	2.900
Brant	P-3275-14	Onondaga	Sept. 2/61	54	0.265
Bruce	P-2898-16	Lindsay and Eastnor	June 17/61	6	6.520
	P-2248-34	Saugeen	Aug. 12/61	21	1.900
	P-2248-36	Saugeen	April 1/62	21	0.670
Carleton	P-3409-15	City of Ottawa	Oct. 2/61	17	1.500
Cochrane	P-3123-36	Clergue	Sept. 23/61	11	0.150
	P-3123-38	Clergue and Calvert	Oct. 7/61	11 and 67	0.040
Dufferin	P-2980-4	East Luther	June 17/61	104	0.750
Durham	P-2740-44	Manvers	April 1/62	35	0.550
	P-2740-45	Manvers	April 1/62	35	5.430
Elgin	P-2027-16	Malahide	Sept. 23/61	3	0.038
	P-2058-66	Yarmouth	April 28/61	3	0.029
Glengarry	P-1924-29	Lochiel	April 1/61	34	1.780
Grenville	P-1588-15	Oxford	April 28/61	16	0.930
Grey	P-1671-27	Collingwood	July 22/61	26	1.030
	P-1908-40	St. Vincent	July 13/61	26	0.900
Haldimand	P-1700-20	Moulton	April 22/61	3	0.740
	P-2748-27	Seneca	Feb. 10/62	54	1.745
Halton	P-1939-147	Trafalgar	Jan. 13/62	Q.E.W.	3.420
	P-1939-149	Trafalgar	Jan. 20/62	Q.E.W.	1.060
Hastings	P-2773-23	Madoc	Sept. 2/61	62	0.300
	P-1953-29	Rawdon and Sidney	Jan. 16/62	14 and 33	2.070
	P-1926-26	Thurlow	May 20/61	37	1.500
	P-1926-27	Thurlow	June 17/61	37	0.100
	P-1926-28	Thurlow	July 22/61	37	1.000
	P-1926-29	Thurlow	July 22/61	37	0.550

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Huron	P-2011-29	Hullett	Sept. 3/61	8	0.130
Kenora	P-2245-11	Melick	May 20/61	604	3.110
Lanark	P-2007-57	Drummond	July 22/61	7	0.210
Leeds	P-3095-112	Elizabethtown	April 28/61	401	0.500
	P-3095-119	Elizabethtown	Mar. 3/62	401	0.050
	P-3337-12	Leeds	April 1/61	2	0.220
	P-2140-49	Leeds	Sept. 2/61	401	0.380
Middlesex	P-1421-68	London	May 27/61	4	0.580
	P-1813-37	London	June 17/61	22	0.750
	P-2703-14	London	May 27/61	2	2.650
	P-1988-65	Westminster	June 17/61	2	2.050
	P-3298-12	Westminster	June 10/61	135	0.820
	P-3053-116	Westminster	June 17/61	401	0.510
Muskoka	P-3300-20	Macaulay	Mar. 10/62	532	0.220
	P-2537-57	Monck	Feb. 10/62	118	0.680
Northumberland	P-3176-47	Brighton	July 22/61	401	0.490
	P-1947-19	Hamilton	Feb. 24/62	2	0.710
	P-3080-78	Hamilton	July 22/61	401	0.170
Ontario	P-2310-77	Pickering	July 22/61	401	0.500
Parry Sound	P-2910-67	North Himsworth	April 28/61	11	0.720
	P-2910-69	North Himsworth	April 28/61	11	0.140
Peel	P-1857-209	Toronto	Oct. 7/61	Q.E.W.	3.330
	P-1954-58	Toronto	July 22/61	2	0.170
Peterborough	P-5027	North Monaghan	May 20/61	7-A	0.400
Prince Edward	P-1508-36	Ameliasburgh	June 10/61	14	0.090
Rainy River	P-2300-14	Atwood	June 22/61	11	0.068
	P-2479-10	Freeborn	Oct. 7/61	Atikokan Steep Rock	1.900
	P-3076-35	Unsurveyed Territory	April 1/62	11	0.570
Renfrew	P-6017	Burns	Oct. 7/61	62	0.910
	P-1823-10	McNab	Mar. 17/62	17	0.670
	P-1559-18	Pembroke	Feb. 10/62	17	0.340
	P-2902-16	Sherwood	Oct. 14/61	62	9.220
Simcoe	P-1608-22	Flos	April 1/62	27	0.900
	P-2177-17	Flos	April 1/62	92	0.580
	P-1726-35	Oro	April 1/62	11	0.440
Sudbury	P-2135-12	Neelon	May 1/61	541	2.630
	P-3014-30	Waters	Jan. 20/62	17	0.150
Temiskaming	P-2545-19	Teck	April 22/61	66	1.020
Thunder Bay	P-2461-71	Nipigon	April 1/62	17 T.C.	1.620
	P-3122-9	Oliver	May 27/61	590	1.010
	P-2565-9	Paipoonge	July 1/61	61	2.300
	P-3495-4	Paipoonge	June 10/61	590	0.019
Victoria	P-2515-17	Alnwick	July 1/62	45	0.790
	P-1946-28	Ops	Sept. 23/61	7	0.700
	P-2031-37	Ops	July 15/61	35	1.950
	P-5016-2	Ops	Oct. 14/61	35B	0.860
	P-5016-3	Ops	Oct. 7/61	35B	0.380
	P-5031-1	Ops	Oct. 14/61	7B	0.690

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Waterloo	P-1688-11	Waterloo	April 28/61	24	2.120
	P-2437-42	Woolwich	Feb. 10/62	86	0.430
Welland	P-1890-40	Wainfleet	May 20/61	3	0.010
Wellington	P-2077-44	Arthur	July 22/61	6	0.650
	P-1942-47	Nichol	Mar. 31/62	6	0.370
Wentworth	P-1944-38	Barton	April 22/61	53	5.790
	P-3535-5	Barton	April 28/61	55	1.850
	P-2070-135	Nelson	April 1/62	Q.E.W.	4.157
York	P-1960-107	Etobicoke	Mar. 31/62	Q.E.W.	0.165
	P-2106-14	Vaughan	May 20/61	49	3.220
	P-2106-15	Vaughan	May 20/61	49	.....

APPENDIX No. 3C

SCHEDULE OF EXISTING ROADS ASSUMED AS PORTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1962

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-8048	Aberdeen	Mar. 29/62	638	5.500
	P-8047	Aberdeen (Additional)	Mar. 29/62	638	4.000
	P-8046	MacDonald	Mar. 29/62	638	6.000
	P-8045	Meredith	Mar. 29/62	638	2.500
Cochrane	P-8029	Clute	July 28/61	636	2.000
	P-2638-9	Way	Dec. 18/61	11	0.130
Dufferin	P-2980-5	East Luther	Nov. 6/61	104	0.760
Dundas	P-6020	Mountain and Winchester	July 27/61	43	11.500
Essex	P-2854-5	Gosfield South	April 13/61	18A	0.630
Grenville	P-6019	Wolford, Oxford, South Gower	July 27/61	43	15.000
Haliburton	P-7081	Glamorgan	July 27/61	507	5.000
Huron	P-2225-26	Colborne	Aug. 25/61	21	0.180
	P-1848-42	East Wawanosh	Nov. 9/61	4	0.019
	P-2012-49	Hay	Nov. 9/61	4	0.100
	P-2851-12	Turnberry, East Wawanosh, Morris and Town of Wingham	Nov. 2/61	86	0.960
Kent	P-1439-19	Raleigh	Oct. 26/61	3	0.170
Lambton	P-1956-27	Moore	April 7/61	40	0.130
Lanark	P-2007-60	Drummond	July 7/61	7	0.270
	P-6018	Montague	July 27/61	43	10.500
Lennox and Addington	P-3175-58	Richmond	Jan. 29/62	401	0.140
	P-3173-85	Ernestown	Nov. 27/61	401	0.240
Lincoln	P-3541-9	Niagara	July 12/61	405	0.150
Middlesex	P-2538-21	Town of Strathroy (Twp. of Adelaide)	June 6/61	81	0.250
	P-3053-122	Westminster	Sept. 29/61	..	0.120
Muskoka	P-7080	Medora	July 27/61	632	10.000
Nipissing	P-7077	Calvin, Lauder and Pentland	July 28/61	630	19.000
Norfolk	P-2636-1	Windham	Nov. 14/61	24	0.038
Northumberland	P-3080-87	Hamilton	Feb. 16/62	401	0.675
	P-3073-68	Murray	Jan. 12/62	401	0.233
Ontario	P-5033	Thorah	July 20/61	48	5.000
Oxford	P-2848-13	Blandford	July 25/61	97	0.039

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Parry Sound	P-7079	Humphry	July 27/61	632	6.500
Peel	P-1857-215	Toronto	Sept. 19/61	Q.E.W.	0.440
Peterborough	P-1955-39	Smith	Jan. 25/62	28	0.240
Renfrew	P-3148-7	Schwenger	May 19/61	622	0.500
	P-3148-8	Schwenger	Nov. 1/61	622	1.090
	P-2202-22	Hagarty	April 11/61	60	0.210
	P-6021	Wilberforce, Bromley and Admaston	July 27/61	60	17.000
Sudbury	P-7078	Balfour, Blezard and Rayside	July 27/61	634	12.000
Thunder Bay	P-3427-6	Nakina	Dec. 7/61	584	0.106
	P-2623-3	Nipigon	July 28/61	628	3.800
	P-2763-26	Pardee	July 28/61	61	2.760
Victoria	P-5032	Eldon	July 20/61	48	1.750
	P-1527-18	Mariposa	Aug. 2/61	7	0.019

APPENDIX No. 4

BRIDGES COMPLETED DURING 1961

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Ajax Interchange	Precast, prestressed concrete beam	2 @ 53′–6½″	Hwy. 401 Toronto–Oshawa	Pickering	8–9	I	Ontario	6
Armstrong Twp. O.N.R. Overhead (Earlton Overhead)	Prestressed beam and slab	48′–4½″/7′ @ 49′–6″/ 48′–4½″	Hwy. 11 Earlton By-pass	Armstrong	6	IV	Timiskaming	14
Ausable River Bridge Ext.	Composite steel beam	80′	Hwy. 81 Hwy. 22 to Grand Bend	Williams, east and west	1 2	E.C.R. and W.C.R.	Middlesex	2
Bayswater Ave. Bridge 13	Concrete rigid frame	60′	Ottawa Queensway	.....	....	....	Carlton	9
Beaverton River Bridge	Concrete "T"-beam	40′	Hwys. 7 and 12 Greenbank–Blackwater	Brock	12	III	Ontario	7
Black Creek Bridge (East Branch)	Concrete rigid frame	43′	Development Rd. 471 Hwy. 79–Oil City	Enniskillen	30	IV–V	Lambton	1
Black River Bridge at Matheson	Composite steel beam	70′–7½″/71′–3″/70′ 7½″	Hwy. 101 Timmins–Quebec Border	Carr	5	I	Cochrane	14
Blandford Twp. Bridge 1	Prestressed beam and slab	60′/84′/84′/60′	Hwy. 401 Eastwood–Preston	Blandford	1	V	Oxford	2
Blandford Twp. Bridge 5	Prestressed beam and slab	52′/74′/74′/52′	Hwy. 401 London–Preston	Blandford	6–7	II	Oxford	2
Blenheim Twp. Bridge 1	Continuous concrete "T"-beam	48′/72′/72′/48′	Hwy. 401 Eastwood–Preston	Blenheim	1	X–XI	Oxford	2
Blenheim Twp. Bridge 8	Concrete rigid frame	2 @ 73′	Hwy. 401 Eastwood–Preston	Blenheim	19	VI–VII	Oxford	2
Boyne River Bridge Extension	Concrete rigid frame	25′	Hwy. 69 T.C. Sudbury–Mactier	Foley	134	B	Parry Sound	11
Brudenell Creek Bridge	Concrete rigid frame	30′	Secondary Rd. 521 Brudenell Killaloe	Hagerty	6	V	Renfrew	10
Brudenell Creek Bridge	Steel truss	77′–6″	Town bridge in Killaloe	Hagerty	6	V	Renfrew	10
Cornwall Twp. Bridge 16 C.P.R. Overhead	Steel beam	6 @ 62′, 2 @ 61′–4½″	Hwy. 401 Cornwall–Quebec Bdry.	Cornwall	C	II	Stormont	9
Cypress River Bridge	Composite steel beam	70′	Hwy. 17 T.C. Nipigon–Rossport	No. 89	....	....	Thunder Bay	19

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Doherty Creek Bridge	Concrete rigid frame	36′	County Rd. 18A Ingleside–Bunkerhill	Osnabruck	19	III	Stormont	9
Duffins Creek at Church St.	Prestressed concrete beam	3 @ 46′	Church St. at Pickering	Pickering	14–15	I	Ontario	6
Duffins Creek Trestle at C.N.R.	Concrete trestle, continuous slab	4 @ 30′, 2 @ 30′–9″, 2 @ 33′–9″, 1 @ 50′	Church St. at Pickering	Pickering	14–15	I	Ontario	6
Edwardsburg Twp. Bridge 1 C.P.R. Overhead	Concrete rigid frame	41′ 7⅞″	Hwy. 401 Brockville–Cornwall	Edwardsburg	35	I	Grenville	8
Edwardsburg Twp. Bridge 4 (Hwy. 16 Interchange)	Concrete box girder	120′ 7½″	Hwys. 401 and 16 Prescott–Cornwall	Edwardsburg	27–28	I	Grenville	9
Edwardsburg Twp. C.N.R. Overhead	Continuous concrete slab	2 @ 26′–4½″, 3 @ 40′–9″	Hwy. 16 Hwy. 2–Ottawa	Edwardsburg	27–28	I	Grenville	9
Ernestown Twp. Bridge 3 (Brandons Creek)	Concrete rigid frame (twin)	27′	Hwy. 401 Napanee–Odessa	Ernestown	5	VI	Lennox and Addington	8
Ernestown Twp. Bridge 9 (Wilton Creek)	Concrete rigid frame (twin)	50′	Hwy. 401 Napanee–Odessa	Ernestown	20	V	Lennox and Addington	8
Ernestown Twp. Bridge 10 Camden Road)	Continuous boat type	45′/75′–6″/75′–6″/45′	Hwy. 401 Napanee–Odessa	Ernestown	20–21	V	Lennox and Addington	8
Ernestown Twp. Bridge 12 (Wilton Road)	Continuous concrete girder	40′/66′–3″/66′–3″/40′	Hwy. 401 Napanee–Odessa	Ernestown	31–32	IV	Lennox and Addington	8
Ernestown Twp. Bridge 14 (Mud Lake Road)	Continuous concrete girder	43′–6″/69′/69′/43′ 6″	Hwy. 401 Napanee–Odessa	Ernestown	33	IV	Lennox and Addington	8
Fairmount Ave. Bridge 12	Concrete rigid frame	60′–2½″	Ottawa Queensway	...	...		Carleton	9
Fifteen Mile Creek	Continuous hollow slab (precast)	3 @ 44′–1″	Q.E.W. and Nth. Serv. Rd. Grimsby–St. Catharines	Louth	9	I	Lincoln	4
Gananoque River Bridge	Composite steel beam	53′–9″/75′–3″/53′ 9″	Hwy. 32 Hwy. 15–Gananoque	Leeds	9–10	II	Leeds	8
Goderich Twp. C.N.R. Overhead	Continuous concrete slab	2 @ 18′–6″, 5 @ 21′–2″, 2 @ 22′, 3 @ 25′, 2 @ 21′–6″, 2 @ 24′–6″	Hwy. 21 Bayfield–Port Albert	Goderich		Block "C"	Huron	3
Godin Creek Culvert	Double concrete rigid frame box	2 @ 16′	Hwy. 41 Denbigh–Eganville St.	Griffith	13	III	Renfrew	10
Grand River Bridge at Freeport	Steel plate girder	2 @ 105′, 3 @ 140′	Hwy. 8 at Freeport	Waterloo	12 and 14	B.F.	Waterloo	3

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Gravel River Bridge	Continuous steel beam	2 @ 85′	Hwy. 17 T.C. Nipigon–Rossport	No. 88			Thunder Bay	19
Mewburn Rd. Underpass	Continuous boat type	38′–67′–67′–38′	Hwy. 405 Q.E.W.–Queenston	Niagara	137/140		Lincoln	4
Harwich Twp. Bridge 1A (Taff Creek Drain)	Concrete rigid frame (twin)	25′	Hwy. 401 Toronto–Windsor	Harwich	16	T.L.R.	Kent	1
Harwich Twp. Bridge 8 (Aproctor Drain)	Concrete rigid frame (twin)	22′	Hwy. 401 Toronto–Windsor	Harwich	24	E.C.R.	Kent	1
Harwich Twp. Bridge 12 (McGregor Creek)	Concrete rigid frame (twin)	30′	Hwy. 401 Toronto–Windsor	Harwich	26	I I.C.R.	Kent	1
Harwood Ave., Ajax C.N.R. Overhead	Continuous steel beam	40′–50′–40′	At. Hwy. 401 Interchange	Pickering	8–9	I	Ontario	6
Holland Ave. Bridge 10	Concrete rigid frame (twin)	69′–10″	Ottawa Queensway				Carleton	9
Humber River Bridge (Mill Pond)	Continuous concrete slab	28′–40′–28′	Hwy. 50 Hwy. 9–Bolton	Albion	27	VI–VII	Peel	6
Hwy. 403 Underpass (Hwy. 6, W.B. Lane) Chedoke Br. 1	Continuous box girder	60′–85′–85′–82′–38′	Hwy. 403 Q.E.W.–Hwy. 2	West Flamboro			Wentworth	4
Hwy. 403 Overpass (Ramp "R") Chedoke Br. 6	Continuous box girder	50′–82′–45′	Hwy. 403 Q.E.W. Hwy. 2	West Flamboro			Wentworth	4
Hwy. 403 Underpass (Ramp "Q") Chedoke Br. 7	Continuous box girder	56′–104′–74′	Hwy. 403 Q.E.W. Hwy. 2	West Flamboro			Wentworth	4
Island Park Drive Bridge 8	Welded plate girder	50′	Ottawa Queensway				Carleton	9
Jeanette Creek Bridge (South Service Rd.)	Concrete rigid frame	56′–6 7/8″	Hwy. 401 Toronto–Windsor	Raleigh	18	VII A	Kent	1
Jock River Bridge	Composite steel plate girder	120′	Hwy. 16 Kemptville–Ottawa	Nepean	10	I–II	Carleton	9
Kingston Twp. Bridge 7 (Westbrook Road)	Continuous boat type	32′–6″/58′–58′/32′–6″	Hwy. 401 Hwy. 38–Odessa	Kingston	3–4	IV	Frontenac	8
Kingston Twp. Bridge 11 (Hwy. 38 Interchange)	Concrete "T"-beam	48′/70′–2 3/8″/70′–2 3/8″/48″	Hwy. 401 Hwy. 38 Interchange	Kingston	11	IV	Frontenac	8
King-Vaughan T.L. Bridge	Concrete rigid frame box girder	122′–10″	Hwy. 400	King-Vaughan	1 35	V V	York	6
Little Gravel River Bridge	Concrete rigid frame	50′	17 T.C. Nipigon Rossport	No. 88			Thunder Bay	19

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Magnetawan River Bridge	Composite steel plate girder	120′	Hwy. 11 Huntsville–Burks Falls	Armour	14	II	Parry Sound	11
McGregor Creek Bridge	Concrete rigid frame (partly prestressed deck)	114′	County Rd. 14	Harwich	26	I E.C.R., W.C.R.	Kent	1
McGregor Creek Tributary	Concrete rigid frame	30′–8″	County Rd. 14	Harwich	25–26	I E.C.R., W.C.R.	Kent	1
Maitland River Bridge at Goderich	Composite welded plate girder, simply supported	91′ 5″, 93′ 5½″/90′–6⅛″/86′–7⅜″/81′–10½″/75′ 4⅞″	Hwy. 21 Bayfield–P. Albert	Colborne		Block "C"	Huron	3
Maitland River Bridge at Harriston	Concrete rigid frame	50′	Hwy. 87 at Harriston	Minto			Wellington	3
Marysville Creek Bridge	Barrel arch culvert	32′ 6″	County Rd. 15 at Hwy. 401 Interchange	Tyendinaga	31	I N	Hastings	8
Marysville Creek Diversion Interchange	Concrete rigid frame	30′ 10″	County Rd. 15 at Hwy. 401 Interchange	Tyendinaga	31	I N	Hastings	8
McDougall Twp. C.N.R. Overhead	Composite steel girder	55′/55′ 3¾″/56′–3″	Hwy. 69 T.C. Parry Sound Nobel	McDougall	15, 16, 29	IV, V, A.	Parry Sound	11
Missinaibi River Bridge	Continuous plate girder	2 @ 100′, 2 @ 125′, 3 @ 150′	Hwy. 11 Kapuskasing–Hearst	Eilber	27–28	IV	Cochrane	16
Nemegosenda River Bridge	Creosoted timber glu-laminated beams	80′	Hwy. 101 Chapleau Foleyet	Chewett	7	I	Sudbury	18
Nineteen Mile Creek (Culvert Extension)	Barrel arch culvert (extension)	24′	Hwy. 3 New Sarum	Yarmouth	19	IX	Elgin	2
Nith River Bridge at Plattsville	Continuous steel beam	72′–90′ 72′	Hwy. 97 Hwy. 19–Galt	Blenheim	18–19	XII	Oxford	3
Nottawasaga River at Wasaga Beach	Continuous steel plate girder	66′–85′ 85′–66′	Hwy. 92 Elmvale–Wasaga Beach	Sunnidale	10	XVI	Simcoe	5
Nottawasaga River Bridge	Continuous steel beam	58′ 84′ 59′	Hwy. 89 Cookstown–Primrose	Essa-Tecumseth	1, 10	V, XIV	Simcoe	5
Osnabruck Twp. Bridge 4 (Doherty Creek)	Concrete rigid frame (twin)	36′	Hwy. 401 Prescott Cornwall	Osnabruck	19–20	II–III	Stormont	9
Oxford West Twp. Bridge 6	Concrete rigid frame box girder	94′–5″	Hwy. 401 London Eastwood	Oxford West	12–13	II	Oxford	2
Parkdale Ave. Bridge 11	Concrete rigid frame (twin)	61′ 1″	Ottawa Queensway				Carleton	9

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Pigeon River Bridge (International Bridge)	Composite steel beam, simply supported	2 @ 60′–9 1/2″ 4 @ 61′–5″	Hwy. 61 Canada–U.S. Border	Pardee			Thunder Bay	19
Pickering Twp. Bridge 8 (Moore Rd.)	Concrete rigid frame girder	123′–4 3/4″	Hwy. 401 Toronto–Oshawa	Pickering	28–29	III B.F.	Ontario	6
Pike Creek Bridge	Composite steel beam	72′	Hwy. 39 Hwy. 2–Windsor	Maidstone	3	E. & W.	Essex	1
Raleigh Twp. Bridge 6 (Jeanette Creek)	Concrete rigid frame (twin)	56′–6 7/8″	Hwy. 401 Toronto–Windsor	Raleigh	18	VIII	Kent	1
Raleigh Twp. Bridge 7 (Jeanette Creek)	Concrete rigid frame (twin)	43′	Hwy. 401 Toronto–Windsor	Raleigh	15–16	VII	Kent	1
Raleigh Twp. Bridge 9 (Government Drain No. 1)	Concrete rigid frame (twin)	55′	Hwy. 401 Toronto–Windsor	Raleigh	12–13	VII	Kent	1
Raleigh Twp. Bridge 12 (Finn and Kooper Drain)	Concrete rigid frame (twin)	55′	Hwy. 401 Toronto–Windsor	Raleigh	7	VI	Kent	1
Rainy Lake Causeway (Low Level)	Precast concrete girder	4 @ 81′, 24 @ 97′	Hwy. 11 Rainy Lake–Atikokan				Kenora	20
Seven Mile Bridge (Rainy Lake)	Timber trestle	2 @ 12′–5″, 7 @ 16′	Hwy. 11 Rainy Lake–Atikokan	Watten			Kenora	20
Richmond Twp. Bridge 8 (Hwy. 41 Interchange)	Concrete rigid frame	56′–6″	Hwy. 401 Napanee–Hwy. 41	Richmond	21–22	II	Lennox and Addington	8
Saugeen River Bridge at Mount Forest	Deck truss	32′–6″/170′/42′	Hwy. 6 Arthur–Tobermory	Arthur			Wellington	5
Saugeen River South Bridge	Continuous composite steel beam	3 @ 28′	Development Rd. 384 Shelburne–Mt. Forest	Arthur–Egremont	14, 1	IV, V	Grey Wellington	5
Scarborough Twp. C.P.R. Overhead	Concrete box girder (3 spans), concrete "T"-beam (2 spans)	2 @ 38′–8 5/8″, 1 @ 109′–5 3/8″, 2 @ 73′–3 5/8″	Hwy. 48 Hwy. 401–Markham	Scarborough	19	III	York	6
Seguin River Bridge	Continuous steel beam	80′–100′–80′	Hwy. 69 Parry Sound By-pass	McDougall	25	II	Parry Sound	11
Simpson's Bridge (Thames River Bridge)	Steel plate girder, continuous (3 spans), simply supported (1 span)	99′–4 1/2″/130′/100′/60′	Hwy. 76 Hwy. 3–Hwy. 2	Aldborough	21	B	Elgin	2
Snake River Bridge	Composite steel beam, simply supported	76′	Hwy. 17 Pembroke–Renfrew	Westmeath	11	I–II	Renfrew	9
Smoke Creek Bridge	Timber deck, glu-laminated beams	28′ 63′ 28′	Hwy. 60 Baysville–Barrys Bay	Peck	16	VII	Nipissing	11

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Southwold Twp. Bridge 3 (Dodd's Creek)	Concrete rigid frame (twin)	50′	Hwy. 401 London–Windsor	Southwold	21	III	Elgin	2
Southwold Twp. Bridge 11 C.N.R. Overhead	Composite steel beam, simply supported	3 @ 62′	Hwy. 401 London–Windsor	Southwold	10	III	Elgin	2
Steeles Ave.	Concrete rigid frame	70′	Hwy. 400	North York	24	V	York	6
Sturgeon River Bridge	Steel beam, timber deck	69′	Res. Rd. Valora–Savant Lake	Unsurv. terr.			Thunder Bay	19
Talford Creek Bridge	Composite steel plate girder	96′	Hwy. 40 Chatham–Sarnia	Moore	68	Front	Lambton	1
Thames River Bridge at Highbury Ave.	Continuous steel plate girder	2 @ 125′	Highbury Ave. Hwy. 401–London	Westminster	16	B	Middlesex	2
Thames River Bridge	Steel truss through	200′	Hwy. 4 London–Elginfield	London	15 16	III	Middlesex	2
Tilbury E. Twp. Bridge 2 (Government Drain No. 1) (Townline Drain	Concrete rigid frame (twin)	55′	Hwy. 401 Toronto–Windsor	Tilbury E.	1	VI	Kent	1
Tilbury E. Twp. Bridge 4 (McDougall Drain)	Concrete rigid frame (twin)	30′	Hwy. 401 Toronto–Windsor	Tilbury E.	3 4	VI	Kent	1
Tilbury N. Twp. Bridge 2 (Tilbury Creek)	Concrete rigid frame (twin)	50′	Hwy. 401 Toronto–Windsor	Tilbury N.	20	III	Essex	1
Tilbury N. Twp. Bridge 3 (Tilbury By-pass)	Composite steel plate girder, simply supported	41′/85′–9″/ 85′–9″/41′	Hwy. 401 Toronto–Windsor	Tilbury N.	19	IV	Essex	1
Tomiko River Bridge	Continuous composite steel beam	36′–56′ 36′	Hwy. 11 North Bay–N. Liskeard	Lyman	1	IV	Nipissing	13
Trent Canal Bridge at Gamebridge	Steel plate girder (1) steel beam (3), simply sup'ted	40′–50′–107′–40′	Hwy. 12 T.C. Gamebridge By-pass	Thorah	11	X	Ontario	7
Tyendinaga Twp. Bridge 9 (Marysville Service Rd.)	Continuous "T"-beam with haunches	2 @ 45′, 2 @ 75′–3″	Hwy. 401 Toronto–Cornwall	Tyendinaga	30–31	I N	Hastings	8
Vaughan Twp. C.N.R. Overhead	Concrete rigid frame	49′	Hwy. 400 Toronto–Barrie	Vaughan	3	V	York	6
Welland Ave. Overpass at St. Catharines	Concrete rigid frame	81′–3⅛″	Queen Elizabeth Way	...	...		Lincoln	4
Westminster Twp. Bridge 2 (Victoria Rd. Underpass)	Concrete box girder	94′–1″	Hwy. 401 London–Eastwood	Westminster	7	II	Middlesex	2

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Westminster Twp. Bridge 4A (Highbury Ave. Underpass)	Continuous concrete box girder	40′–122′–40′	Hwy. 401 London–Eastwood	Westminster	16	II	Middlesex	2
Whitson Creek Bridge	Prestressed concrete beam	78′	Secondary Rd. 544 Sudbury–Geneva Lake	Balfour	3–4	II–III	Sudbury	17
Wicklow River Bridge	Continuous composite steel beam	40′–60′–40′	Hwy. 11 Cochrane–Porquis Jct.	St. John	10	II	Cochrane	16
Wilmot Creek Bridge	Concrete rigid frame	45′	Hwy. 97 Near Plattsville	Blenheim	18–19	XII	Oxford	3
Wilton Creek Bridge (South Service Rd.)	Concrete rigid frame	50′	Hwy. 401–Service Rd. Odessa–Napanee	Ernestown	20	V	Lennox and Addington	8
Yonge St. Bridge widening	Steel beam, simply supported	2 @ 50′–6½″	Hwy. 401 Hwy. 11 Interchange	North York	14	I	York	6

APPENDIX No. 5

COUNTIES

Chronological Summary of Road Expenditure and Provincial Subsidy

Year	Number of Counties	Approved Expenditure	Government Subsidy
1903	4	$ 166,149.06	$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410,70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080,94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
1961	37	31,210,823.16	17,179,416.16
Totals to Date....		$480,076,124.42	$248,993,036.89

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1961
Provincial Subsidies on 1961 Expenditures Being Paid in the 1961-62 Fiscal Year

County	Year of Establishment of System	Road Mileages			Total Approved Expenditures to End of 1961	Total Government Grant
		County Roads	County Sub-urban Roads	Total		
Brant	1917	70.30	62.10	132.40	$ 7,803,004.46	$ 4,173,390.76
Bruce	1917	314.00	.....	314.00	11,621,008.23	6,182,080.30
Carleton	1910	154.31	107.49	261.80	21,823,428.01	11,372,772.58
Dufferin	1918	177.40	.....	177.40	5,274,808.01	2,669,993.33
Elgin	1917	244.10	25.00	269.10	11,307,816.41	5,928,985.72
Essex	1916	221.50	53.00	274.50	19,107,283.65	9,948,688.71
Frontenac	1907	121.69	43.61	165.30	5,577,919.57	2,854,515.95
Grey	1918	311.50	34.70	346.20	12,589,026.31	6,485,313.60
Haldimand	1912	158.70	.....	158.70	10,315,286.05	5,230,279.42
Halton	1907	147.50	.....	147.50	8,560,579.82	4,341,955.17
Hastings	1904	253.90	14.50	268.40	8,728,217.19	4,333,419.12
Huron	1917	366.10	.....	366.10	12,933,448.23	6,973,133.87
Kent	1917	378.65	27.15	405.80	20,144,151.80	11,049,106.93
Lambton	1918	243.54	25.46	269.00	13,390,596.56	7,085,847.43
Lanark	1903	211.40	.....	211.40	7,531,879.32	3,852,766.16
Leeds and Grenville	1910	302.80	35.40	338.20	10,564,341.33	5,276,169.83
Lennox and Addington	1906	177.50	.....	177.50	6,605,336.27	3,410,341.05
Lincoln	1904	114.70	47.70	162.40	12,167,937.68	6,077,174.91
Middlesex	1906	380.72	65.58	446.30	23,279,447.23	12,386,551.22
Norfolk	1917	211.20	.....	211.20	12,812,224.99	6,569,438.90
Northumberland and Durham	1918	288.95	12.75	301.70	11,835,541.21	6,126,469.17
Ontario	1918	218.10	21.70	239.80	10,841,535.80	5,679,317.81
Oxford	1904	204.40	15.50	219.90	12,655,286.10	6,493,492.94
Peel	1907	150.90	.....	150.90	16,943,367.27	9,002,361.58
Perth	1907	173.95	24.55	198.50	8,398,758.67	4,339,721.30
Peterborough	1919	109.60	70.00	179.60	6,585,903.65	3,537,157.99
Prescott and Russell	1917	326.50	.....	326.50	12,985,786.51	6,577,682.74
Prince Edward	1907	184.40	.....	184.40	6,494,001.88	3,249,343.32
Renfrew	1918	200.80	.....	200.80	10,816,673.95	5,658,880.55
Simcoe	1903	234.10	18.20	252.30	13,644,728.34	6,858,299.87
Stormont, Dundas and Glengarry	1917	376.90	62.70	439.60	15,027,293.47	7,599,154.70
Victoria	1917	223.70	.....	223.70	7,790,176.42	4,071,903.85
Waterloo	1908	91.20	117.20	208.40	14,786,009.22	7,827,801.70
Welland	1912	120.30	33.60	153.90	16,378,750.58	8,392,620.26
Wellington	1903	342.00	36.00	378.00	16,508,225.14	8,673,318.61
Wentworth	1903	43.60	126.10	169.70	15,182,644.46	7,618,488.94
York	1911	.....	172.80	172.80	41,063,700.63	21,085,096.60
Totals		7,850.91	1,252.79	9,103.70	$480,076,124.42	$248,993,036.89

APPENDIX

SUMMARY OF COUNTY

(Government Subsidies Paid

Name of County	Roads		Bridges and Culverts	
	Construction	Maintenance	Construction	Maintenance
Brant	$ 242,322.40	$ 145,959.55	$ 10,284.15	$ 10,550.14
Bruce	414,606.39	153,600.00	170,598.41	14,879.87
Carleton	452,501.45	124,169.72	172,930.29	6,481.41
Carleton (Ottawa Sub.)	757,875.99	118,394.28	53,600.29	4,317.64
Dufferin	252,267.71	132,500.00	32,764.68	2,174.86
Elgin	336,316.02	238,780.15	179,905.41	28,068.72
Essex	544,248.26	393,299.01	133,581.78	18,481.39
Frontenac	140,264.47	195,920.23	56,195.00	10,770.00
Grey	309,277.02	280,000.00	152,622.96	6,365.85
Haldimand	560,110.41	117,534.94	38,558.03	93.36
Halton	291,615.68	231,043.90	62,957.02	4,100.57
Hastings	149,252.59	217,785.14	32,101.37	6,072.77
Huron	353,923.82	264,165.64	172,889.51	24,051.51
Kent	507,588.21	196,104.37	1,102,906.82	9,592.83
Lambton	802,498.11	197,997.38	245,450.88	4,639.08
Lanark	188,526.77	119,850.43	63,306.87	14,319.54
Leeds and Grenville	314,000.00	253,074.59	40,877.29	6,822.71
Lennox and Addington	109,836.36	106,983.35	3,987.80	1,638.30
Lincoln	347,653.12	179,754.09	111,118.42	3,106.18
Middlesex	770,716.01	286,690.09	384,134.24	26,738.44
Norfolk	618,374.46	193,070.67	76,612.70	7,122.67
Northumberland and Durham	535,114.70	194,757.84	64,157.77	1,052.39
Ontario	691,067.75	211,838.60	165,427.32	14,527.55
Oxford	440,817.32	270,499.33	156,130.58	13,938.20
Peel	930,050.45	324,680.10	384,463.57	1,526.68
Perth	284,165.54	161,584.47	106,316.80	503.45
Peterborough	242,855.69	120,991.55	56,593.26	13,397.96
Prescott and Russell	345,768.97	233,332.78	87,588.59	16,915.32
Prince Edward	164,563.64	154,552.07	35,771.16	212.23
Renfrew	303,492.74	161,940.59	60,456.43	6,637.88
Simcoe	480,695.29	258,776.03	41,726.87	1,125.15
Stormont, Dundas and Glengarry	207,096.89	254,623.96	25,145.05	6,489.32
Victoria	157,693.73	207,851.94	127,647.92	3,710.40
Waterloo	594,103.10	168,660.11	99,456.62	10,888.64
Welland	704,247.65	291,381.93	12,705.33	14,340.57
Wellington	279,004.39	433,190.16	98,043.21	7,456.28
Wentworth	213,616.12	313,330.44	3,700.83	8,912.00
York	997,403.73	282,017.95	86,067.65	5,877.26
Totals	$16,035,532.95	$ 8,190,687.38	$ 4,908,782.88	$ 337,899.12

SUMMARY OF METROPOLITAN

Metropolitan Toronto	$19,871,763.69	$ 2,026,577.54	$ 5,639,241.39	$ 262,786.27

No. 7

ROAD EXPENDITURES—1961

in 1961-1962 Fiscal Year)

Winter Control (Maintenance)	Approved Expenditure			Government Subsidy 50% and 80%
	Construction	Maintenance	Total	
$ 12,143.76	$ 252,606.55	$ 168,653.45	$ 421,260.00	$ 216,880.29
72,900.00	585,204.80	241,379.87	826,584.67	468,935.82
10,699.69	625,431.74	141,350.82	766,782.56	437,214.79
70,890.50	811,476.28	193,602.42	1,005,078.70	519,914.73
34,000.00	285,032.39	168,674.86	453,707.25	237,335.49
18,590.63	516,221.43	285,439.50	801,660.93	463,222.71
20,458.48	677,830.04	432,238.88	1,110,068.92	600,653.41
27,000.44	196,459.47	233,690.67	430,150.14	235,164.57
116,500.00	461,899.98	402,865.85	864,765.83	480,079.56
1,391.18	598,668.44	119,019.48	717,687.92	370,439.38
11,521.57	354,572.70	246,666.04	601,238.74	320,736.65
29,226.39	181,353.96	253,084.30	434,438.26	228,671.37
98,247.92	526,813.33	386,465.07	913,278.40	515,721.50
7,367,06	1,610,495.03	213,064.26	1,823,559.29	1,245,529.54
15,125.00	1,047,948.99	217,761.46	1,265,710.45	707,882.22
30,347.06	251,833.64	164,517.03	416,350.67	231,463.26
35,225.41	354,877.29	295,122.71	650,000.00	339,310.00
22,726.25	113,824.16	131,347.90	245,172.06	124,273.86
30,069.26	458,771.54	212,929.53	671,701.07	370,117.92
42,967.38	1,154,850.25	356,395.91	1,511,246.16	878,884.88
53,389.01	694,987.16	253,582.35	948,569.51	499,405.37
56,682.39	599,272.47	252,492.62	851,765.09	445,445.59
56,306.67	856,495.07	282,672.82	1,139,167.89	623,570.40
30,009.89	596,947.90	314,447.42	911,395.32	506,718.29
53,205.79	1,314,514.02	379,412.57	1,693,926.59	962,760.37
12,259.47	390,482.34	174,347.39	564,829.73	314,460.93
29,187.54	299,448.95	163,577.05	463,026.00	252,510.36
44,075.91	433,357.56	294,324.01	727,681.57	395,191.96
23,866.03	200,334.80	178,630.33	378,965.13	200,277.57
29,870.19	363,949.17	198,448.66	562,397.83	301,327.20
69,485.58	522,422.16	329,386.76	851,808.92	438,760.07
82,956.55	232,241.94	344,069.83	576,311.77	297,646.20
38,436.23	285,341.65	249,998.57	535,340.22	307,077.61
45,690.81	693,559.72	225,239.56	918,799.28	492,503.21
69,929.24	716,952.98	375,651.74	1,092,604.72	554,416.13
56,601.36	377,047.60	497,247.80	874,295.40	468,797.54
83,370.06	217,316.95	405,612.50	622,929.45	315,248.58
195,200.13	1,083,471.38	483,095.34	1,566,566.72	810,866.83
$1,737,920.83	$20,944,315.83	$10,266,507.33	$31,210,823.16	$17,179,416.16

ROAD EXPENDITURES—1961

$1,362,619.12	$25,511,005.08	$ 3,651,982.93	$29,162,988.01	$14,581,494.01

APPENDIX No. 8

INCORPORATED TOWNSHIPS

Chronological Summary of Road Expenditure and Provincial Subsidy Including Improvement Districts and Indian Reserves

Year	No. of Townships	Approved Expenditure	Subsidy
1920 to 1934	172–352	$ 58,408,281.44	$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
1961	632	44,505,542.38	24,919,087.33
	Totals	$519,445,137.60	$275,276,808.86

Note: — 574 Townships, 19 Improvement Districts and 39 Indian Reserves are represented in the above expenditures for 1961.

APPENDIX No. 9

CITIES, TOWNS AND VILLAGES

Chronological Summary of Road Expenditures and Provincial Subsidy

Year	No. of Urban Municipalities	Approved Expenditure	Subsidy
1947	324	$ 5,334,316.72	$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
1961	341	37,130,872.81	14,862,154.63
	Totals	$312,512,581.38	$122,864,471.11

Note. — 30 Cities, 8 Separated Towns, 147 Towns, and 156 Villages are represented in the above expenditure for 1961.

APPENDIX No. 10

MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1961
ROADS UNDER LOCAL AUTHORITY

Counties	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bituminous	Asphalt Concrete	Cement Concrete	Other	Total
Brant	2.20		36.70	95.60	36.00	15.70		186.20
Bruce	6.00	3.80	56.30	48.20	21.10			135.40
Carleton	3.10	3.90	16.50	40.50				64.00
Dufferin	0.90	0.30	14.70	2.00	8.40	2.90		29.20
Elgin	8.50	0.40	32.22	34.54	28.65	1.06	1.50	106.87
Essex	2.80	21.10	74.50	46.30	84.50	168.40	2.70	400.30
Frontenac		0.80		34.10	55.70	0.30		90.90
Grey	0.50	1.40	27.20	34.30	12.10	1.90		77.40
Haldimand	22.00	5.30	13.50	24.30	11.50			76.60
Halton	2.00	23.10	86.90	127.50	56.80	4.50		300.80
Hastings	0.10	8.20	22.10	58.10	18.20	0.10		106.80
Huron	1.50	0.20	38.30	30.30	18.50	0.70		89.50
Kent	7.20	0.50	50.00	10.90	121.50	9.20		199.30
Lambton		4.50	51.40	112.60	69.10	2.10		239.70
Lanark	28.60	0.30	31.70	52.00	4.60	0.20		117.40
Lennox-Addington			9.60	13.60	3.30			26.50
Leeds-Grenville		16.70	20.10	35.80	25.20	23.40		121.20
Lincoln	3.40	9.60	37.90	107.10	54.80	51.00		263.80
Middlesex	10.25	1.50	106.45	225.20	147.60	1.70		492.70
Norfolk	3.90		6.40	45.80	9.60	1.10		66.80
Northumberland-Durham	3.80	0.70	68.50	72.35	60.37	3.10		208.82
Ontario	13.88	1.20	117.97	59.97	109.09	2.33		304.44
Oxford	4.20	4.20	23.97	85.96	9.73	4.96	0.40	133.42
Peel		1.40	25.70	30.40	28.00	0.70		86.20
Perth	12.20	15.20	57.80	39.80	35.20	1.00		161.20
Peterborough	7.62		70.20	14.81	38.81	4.36		135.80
Prescott-Russell	7.20	1.30	10.60	26.80	1.50			47.40
Prince Edward			7.00	1.36	11.92	0.50		20.78
Renfrew	1.70	1.37	54.90	18.80	53.33	1.00		131.10
Simcoe		16.70	89.00	105.40	67.60	7.20		285.90
Stormont, Dundas and Glengarry	1.50		7.00	30.30	4.30			43.10
Victoria	15.57		44.83	1.67	24.71			86.78
Waterloo	17.60	5.80	62.70	128.30	214.70	11.20		440.30
Welland	7.20	0.60	57.60	133.50	91.90	6.70	0.10	297.60
Wellington	9.90	0.50	52.90	97.50	40.70	15.30		216.80
Wentworth	3.20	1.70	73.80	157.20	281.00	3.10		520.00
York		1.80	18.20	50.30	43.40			113.70
Totals—Counties	208.52	154.07	1,575.14	2,233.16	1,903.41	345.71	4.70	6,424.71
Metro. Tor. Area	0.08		10.80	4.38	566.03	7.48	24.00	612.77
Districts								
Algoma	27.38	1.30	72.61	2.82	63.87	3.04	0.08	171.10
Cochrane	25.49	0.72	35.89	40.46	33.19			135.75
Kenora			53.38	2.40	21.57			77.35
Manitoulin			10.50	1.50				12.00
Muskoka	18.16	0.37	45.75	24.61	14.76	0.60		104.25
Nipissing	24.06	8.66	58.98	10.79	32.36			134.85
Parry Sound	29.55	0.60	36.07	3.21	19.76			89.19
Rainy River	0.31	1.73	34.27	12.43	8.86	0.11		57.71
Sudbury	0.21	7.99	137.46	33.62	87.24	0.10		266.62
Temiskaming			29.50	1.90	24.00			55.40
Thunder Bay			101.00	41.10	91.25	3.30		236.65
Totals—Districts	125.16	21.37	615.41	174.84	396.86	7.15	0.08	1,340.87
Grand Totals	333.76	175.44	2,201.35	2,412.38	2,866.30	360.34	28.78	8,378.35

APPENDIX

MILEAGE OF ROAD SURFACES

	COUNTY ROADS					
	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bituminous Surface	Asphalt Concrete	Cement Concrete
Brant	.....	.....	26.40	104.60	1.40	.....
Bruce	.....	.....	143.00	130.10	40.30	0.60
Carleton	.....	.....	31.30	230.50	.....	.....
Dufferin	.....	.....	154.40	5.20	17.80	.....
Elgin	.....	.....	90.90	166.90	10.80	0.50
Essex	.....	.....	89.10	90.80	83.30	11.30
Frontenac	.....	.....	76.00	89.30	.....	.....
Grey	.....	.....	262.10	62.30	21.00	0.80
Haldimand	.....	.....	31.40	127.30	.....	.....
Halton	.....	.....	50.40	35.90	61.20	.....
Hastings	.....	.....	173.30	69.70	23.10	2.30
Huron	.....	.....	195.40	112.80	57.90	.....
Kent	0.30	0.30	65.70	14.70	317.30	7.50
Lambton	.....	.....	105.70	49.00	114.20	0.10
Lanark	.....	.....	139.50	71.50	0.40	.....
Lennox and Addington	.....	.....	38.40	78.90	60.20	.....
Leeds and Grenville	.....	.....	152.30	142.70	42.00	1.20
Lincoln	0.90	.....	19.70	140.60	1.20	.....
Middlesex	.....	.....	152.20	131.00	148.95	14.15
Norfolk	.....	.....	3.80	205.80	0.90	0.70
Northumberland & Durham	.....	.....	119.20	150.40	32.10	.....
Ontario	.....	.....	83.00	108.20	48.60	.....
Oxford	.....	.....	79.10	101.20	27.20	12.40
Peel	.....	.....	21.40	76.80	51.80	0.90
Perth	.....	.....	74.90	90.90	32.70	.....
Peterborough	.....	.....	111.30	50.80	17.50	.....
Prescott & Russell	1.10	1.10	183.50	135.40	5.40	.....
Prince Edward	.....	.....	46.40	126.60	11.40	.....
Renfrew	.....	.....	47.80	8.20	143.80	1.00
Simcoe	.....	.....	108.60	88.50	55.20	.....
Stormont, Dundas & Glengarry	.....	.....	143.50	283.40	12.10	0.60
Victoria	.....	.....	114.30	78.00	31.40	.....
Waterloo	.....	.....	36.60	145.20	10.70	15.90
Welland	.....	.....	7.90	126.90	15.60	3.50
Wellington	.....	.....	167.90	107.10	99.30	3.70
Wentworth	.....	.....	2.50	167.20	.....	.....
York	.....	.....	21.50	22.60	128.70	.....
Totals — Counties	2.30	1.40	3,370.40	3,927.00	1,725.45	77.15
					METROPOLITAN	
Metropolitan Toronto Area	.....	.....	.....	0.94	319.42	1.80
Districts						
Algoma	.....	.....	.....	.....	.....	.....
Cochrane	.....	.....	.....	.....	.....	.....
Haliburton	.....	.....	.....	.....	.....	.....
Kenora	.....	.....	.....	.....	.....	.....
Manitoulin	.....	.....	.....	.....	.....	.....
Muskoka	.....	.....	.....	.....	.....	.....
Nipissing	.....	.....	.....	.....	.....	.....
Parry Sound	.....	.....	.....	.....	.....	.....
Rainy River	.....	.....	.....	.....	.....	.....
Sudbury	.....	.....	.....	.....	.....	.....
Temiskaming	.....	.....	.....	.....	.....	.....
Thunder Bay	.....	.....	.....	.....	.....	.....
Totals — Districts	.....	.....	.....	.....	.....	.....
Unorganized Townships	.....	.....	.....	.....	.....	.....
Grand totals	2.30	1.40	3,370.40	3,927.94	2,044.87	78.95

No. 11

AT THE END OF 1961

	INCORPORATED—TOWNSHIP ROADS							
TOTAL	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMINOUS SURFACE	ASPHALT CONCRETE	CEMENT CONCRETE	OTHER	TOTAL
132.40	14.50	13.20	480.60	33.30	13.40	2.50	.....	557.50
314.00	89.00	94.70	1,570.00	19.80	3.50	.....	.....	1,777.00
261.80	44.50	63.60	843.00	49.80	.....	.....	.....	1,000.90
177.40	32.60	22.80	695.00	.....	0.30	.....	.....	750.70
269.10	30.10	40.50	806.30	6.30	1.00	.....	.....	884.20
274.50	1.30	21.70	827.60	101.20	43.00	38.60	.....	1,033.40
165.30	11.50	312.60	633.70	29.70	4.10	.....	.....	991.60
346.20	135.90	129.60	1,916.20	11.70	1.80	0.50	.....	2,195.70
158.70	43.80	58.00	494.50	81.10	17.50	.....	.....	694.90
147.50	5.00	1.50	309.50	86.70	33.10	0.20	.....	436.00
268.40	64.80	312.70	1,252.90	7.60	2.70	.....	.....	1,640.70
366.10	24.30	16.90	1,449.90	10.70	14.60	.....	.....	1,516.40
405.80	2.00	20.30	1,180.10	3.20	14.60	0.50	.....	1,220.70
269.00	7.20	129.40	1,238.60	55.50	1.00	.....	3.20	1,434.90
211.40	42.50	88.00	757.50	19.50	6.90	.....	.....	914.40
177.50	14.90	223.40	435.60	10.50	1.70	.....	.....	686.10
338.20	127.40	224.10	919.30	59.90	13.30	0.90	.....	1,344.90
162.40	83.00	81.20	434.00	103.10	5.90	1.10	.....	708.30
446.30	44.90	18.80	1,515.70	5.00	8.60	0.10	.....	1,593.10
211.20	30.40	112.70	603.40	169.90	1.30	.....	.....	917.70
301.70	218.50	173.80	1,710.50	102.70	4.40	.....	.....	2,209.90
239.80	81.20	12.60	1,005.70	30.50	43.40	.....	.....	1,173.40
219.90	9.80	3.60	1,003.30	15.00	19.50	.....	.....	1,051.20
150.90	12.10	26.10	448.50	231.90	48.60	.....	.....	767.20
198.50	15.30	4.70	1,011.60	1.80	1.20	.....	.....	1,034.60
179.60	54.70	77.80	811.30	6.10	5.30	.....	.....	955.20
326.50	55.60	236.20	662.20	5.20	.....	.....	.....	959.20
184.40	5.50	1.80	386.80	5.60	2.70	1.20	.....	403.60
200.80	79.24	324.68	1,281.77	0.90	11.80	.....	.....	1,698.39
252.30	119.50	23.20	1,997.60	91.20	51.70	.....	.....	2,283.20
439.60	39.20	113.00	1,095.90	25.50	14.70	.....	.....	1,288.30
223.70	38.30	30.80	846.00	13.60	0.50	.....	.....	929.20
208.40	2.10	2.50	538.10	34.70	2.70	0.90	.....	581.00
153.90	203.80	141.40	466.20	341.10	67.40	4.20	0.10	1,224.20
378.00	59.70	14.10	1,085.30	7.70	7.20	0.20	.....	1,174.20
169.70	43.70	24.20	452.10	74.90	5.40	.....	.....	600.30
172.80	27.20	2.90	738.90	55.90	88.20	.....	.....	913.10
9,103.70	1,915.04	3,199.08	33,905.17	1,908.80	563.00	50.90	3.30	41,545.29
ROADS								
322.16	1.00	66.28	174.08	463.15	785.48	1.52	.....	1,491.51
.....	84.32	39.25	696.40	7.80	96.76	3.04	0.08	927.65
.....	142.40	30.50	515.05	16.60	3.70	.....	.....	708.25
.....	24.80	19.40	402.70	42.20	.....	.....	.....	489.10
.....	1.90	4.95	142.65	14.85	.....	.....	.....	164.35
.....	22.30	52.10	423.90	.....	.....	.....	.....	498.30
.....	93.40	99.20	626.30	97.60	0.60	.....	.....	917.10
.....	81.69	60.39	457.61	14.37	14.35	.....	.....	628.41
.....	195.99	47.70	853.36	36.20	7.70	.....	.....	1,140.95
.....	35.40	43.45	508.05	1.10	.....	.....	.....	588.00
.....	44.64	104.26	613.88	9.36	10.64	0.17	.....	782.95
.....	94.40	1.00	525.70	8.40	28.60	.....	.....	658.10
.....	55.00	29.50	612.70	65.10	26.70	.....	.....	789.00
.....	876.24	531.70	6,378.30	313.58	189.05	3.21	0.08	8,292.16
.....	478.33	612.91	3,560.45	8.05	1.10	.....	.....	4,660.84
9,425.86	3,270.61	4,409.97	44,018.00	2,693.58	1,538.63	55.63	3.38	55,989.80

APPENDIX No. 12

SUMMARY OF EXPENDITURES ON URBAN STREETS—1961

Approved 1961 Expenditures by Cities, Towns and Villages under Part X of the Highway Improvement Act

Municipal Road District No.	Approved Expenditures — 1961				Government Subsidy 33⅓%, 50% and 80%
	Cities (30) Sep. Towns (8)	Towns (147)	Villages (156)	Urban Total (341)	
1	$ 1,862,405.79	$ 546,293.26	$ 114,960.27	$ 2,523,659.32	$ 961,979.18
2	2,009,465.04	425,636.33	93,871.63	2,528,973.00	1,055,294.97
3	3,054,545.35	554,811.54	121,894.42	3,731,251.31	1,390,441.82
4	6,129,645.33	753,878.87	88,180.98	6,971,705.18	2,587,914.51
5	170,614.30	239,677.65	89,864.01	500,155.96	229,365.16
6	505,592.13	2,685,760.55	251,183.30	3,442,535.98	1,886,838.00
6 M.T.A.	4,210,015.10	462,646.52	177,556.88	4,850,218.50	1,724,252.75
7	2,122,679.92	423,418.42	118,615.46	2,664,713.80	992,898.76
8	962,556.92	45,076.43	89,817.64	1,097,450.99	404,392.38
9	2,855,938.67	243,625.49	138,674.20	3,238,238.36	1,147,888.58
10	.....	395,743.72	83,531.91	479,275.63	250,522.53
11	.....	197,286.66	48,655.96	245,942.62	128,657.10
12	.....	121,881.45	19,154.43	141,035.88	75,720.24
13	146,602.93	140,883.86	48,008.12	335,494.91	145,763.48
14	.....	455,626.69	1,500.00	457,126.69	231,866.16
16	.....	214,861.94	.....	214,861.94	117,668.18
17	1,363,496.69	310,748.32	.....	1,674,245.01	755,818.64
18	733,008.12	69,067.15	5,445.03	807,520.30	286,224.06
19	818,699.84	35,600.00	.....	854,299.84	291,144.09
20	.....	372,167.59	.....	372,167.59	197,504.04
Totals	$26,945,266.13	$ 8,694,692.44	$ 1,490,914.24	$37,130,872.81	$14,862,154.63

APPENDIX No. 13

TYPES OF SURFACE ON THE KING'S HIGHWAYS

As of March 31, 1962

County or District	Concrete	High Cost Bituminous	Low Cost Bituminous	Gravel	Total
Algoma	11.7	279.8	144.2	36.7	472.4
Brant	11.1	54.5	16.4	.....	82.0
Bruce	10.9	109.4	25.8	21.8	167.9
Carleton	4.9	145.0	.....	.....	149.9
Cochrane	.....	279.0	80.4	51.8	411.2
Dufferin	0.8	60.8	1.0	0.5	63.1
Elgin	13.2	96.4	2.9	3.4	115.9
Essex	55.2	141.4	19.4	.....	216.0
Frontenac	5.0	110.9	47.0	14.9	177.8
Grey	4.9	128.5	.....	11.0	144.4
Haldimand	.....	66.7	8.0	.....	74.7
Haliburton	.....	53.4	64.8	3.5	121.7
Halton	17.0	82.3	.....	3.6	102.9
Hastings	.....	116.5	120.1	1.6	238.2
Huron	9.2	182.2	13.2	.....	204.6
Kenora	.....	287.5	133.2	85.4	506.1
Kent	15.9	160.6	.....	.....	176.5
Lambton	30.1	115.5	9.1	1.6	156.3
Lanark	.....	97.4	10.2	.....	107.6
Leeds and Grenville	25.7	209.6	15.8	6.0	257.1
Lennox and Addington	2.9	72.8	47.6	1.5	124.8
Lincoln	1.3	58.3	19.8	.....	79.4
Manitoulin	.....	.....	23.4	30.2	53.6
Middlesex	8.3	193.3	7.1	16.3	225.0
Muskoka	.....	126.5	62.8	.....	189.3
Nipissing	9.7	183.7	124.8	56.1	374.3
Norfolk	3.4	68.7	14.5	.....	86.6
Northumberland and Durham	.....	245.8	13.7	20.2	279.7
Ontario	15.1	125.9	17.1	.....	158.1
Oxford	8.3	122.1	0.4	15.3	146.1
Parry Sound	.....	145.0	40.1	16.7	201.8
Peel	11.1	93.9	12.3	7.8	125.1
Perth	.....	130.0	.....	1.3	131.3
Peterborough	7.2	69.3	29.0	25.9	131.4
Prescott and Russell	.....	97.1	2.0	.....	99.1
Prince Edward	.....	33.6	17.3	7.7	58.6
Rainy River	.....	74.6	53.3	10.1	138.0
Renfrew	0.8	178.0	116.5	4.1	299.4
Simcoe	5.4	299.2	7.9	5.6	318.1
Stormont, Dundas and Glengarry	3.3	161.8	11.0	.....	176.1
Sudbury	1.4	156.3	34.4	131.8	323.9
Temiskaming	.....	125.0	108.5	27.8	261.3
Thunder Bay	.....	612.9	19.5	19.1	651.5
Victoria	.....	104.1	40.3	10.7	155.1
Waterloo	5.6	71.4	2.0	9.5	88.5
Welland	24.7	87.3	1.2	0.2	113.4
Wellington	10.4	123.2	11.0	3.1	147.7
Wentworth	2.1	120.5	35.5	.....	158.1
York	0.9	153.1	38.5	1.8	194.3
Totals	337.5	6,810.8	1,623.0	664.6	9,435.9

APPENDIX No. 13A

SUMMARY OF KING'S HIGHWAY MILEAGES BY HIGHWAY DISTRICTS

As of March 31, 1962

District	Concrete	High Cost Bituminous	Low Cost Bituminous	Gravel	Total
Chatham	101.2	415.8	28.2	.....	545.2
London	47.9	488.8	24.5	21.3	582.5
Stratford	21.4	507.3	26.9	37.0	592.6
Hamilton	42.5	463.1	80.9	3.8	590.3
Owen Sound	16.8	427.4	27.6	38.0	509.8
Toronto	31.7	370.6	73.9	2.7	478.9
Port Hope	10.6	535.3	79.3	64.5	689.7
Kingston	26.6	476.1	98.1	22.4	623.2
Ottawa	16.0	557.6	39.0	.....	612.6
Bancroft	.....	92.8	306.0	17.5	416.3
Huntsville	.....	341.3	152.1	20.2	513.6
North Bay	9.7	301.2	93.7	65.1	469.7
New Liskeard	.....	190.0	168.9	77.6	436.5
Cochrane	.....	261.2	21.1	34.6	316.9
Sudbury	1.4	244.0	52.6	67.2	365.2
Sault Ste. Marie	11.7	264.9	144.2	78.1	498.9
Fort William	.....	545.4	19.5	29.2	594.1
Kenora	.....	328.0	186.5	85.4	599.9
Totals	337.5	6,810.8	1,623.0	664.6	9,435.9

APPENDIX No. 13B

TYPES OF SURFACE ON SECONDARY HIGHWAYS

As of March 31, 1962

County or District	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
Frontenac	.....	6.3	28.9	.....	35.2
Hastings	.....	14.4	31.5	.....	45.9
Lanark	.....	14.0	.....	.....	14.0
Lennox and Addington	0.8	5.4	.....	.....	6.2
Ontario	.....	.....	7.1	.....	7.1
Peterborough	.....	19.8	37.8	.....	57.6
Renfrew	.....	58.5	47.9	.....	106.4
Victoria	5.6	11.6	42.8	.....	60.0
Algoma	.....	31.9	279.9	.....	311.8
Cochrane	0.7	39.2	126.3	.....	166.2
Haliburton	2.8	53.6	45.4	.....	101.8
Kenora	8.8	8.2	123.1	.....	140.1
Manitoulin	.....	41.4	138.4	.....	179.8
Muskoka	7.7	77.2	18.9	.....	103.8
Nipissing	.....	9.0	44.0	15.1	68.1
Parry Sound	0.4	97.1	105.9	.....	203.4
Rainy River	.....	9.0	213.8	.....	222.8
Sudbury	58.9	19.9	200.2	.....	279.0
Temiskaming	2.4	18.8	165.2	.....	186.4
Thunder Bay	12.0	15.4	361.9	2.4	391.7
Totals	100.1	550.7	2,019.0	17.5	2,687.3

APPENDIX No. 13C

TYPES OF SURFACE ON SECONDARY HIGHWAYS BY HIGHWAY DISTRICTS

As of March 31, 1962

District	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
Port Hope	.....	17.2	67.0	.....	84.2
Kingston	0.8	14.2	6.8	.....	21.8
Ottawa	.....	44.5	.....	.....	44.5
Bancroft	.....	54.1	129.7	.....	183.8
Huntsville	16.1	196.9	126.2	.....	339.2
North Bay	0.4	47.2	137.6	15.1	200.3
New Liskeard	3.1	54.9	296.0	.....	354.0
Cochrane	.....	3.1	143.6	.....	146.7
Sudbury	58.9	54.9	263.5	.....	377.3
Sault Ste. Marie	5.2	31.1	206.9	.....	243.2
Fort William	6.8	24.4	339.4	2.4	373.0
Kenora	8.8	8.2	302.3	.....	319.3
Totals	100.1	550.7	2,019.0	17.5	2,687.3

APPENDIX No. 13D

TYPES OF SURFACE ON TERTIARY ROADS BY HIGHWAY DISTRICT

As of March 31, 1962

Kenora	.....	.....	12.8	..	12.8
Totals	..	..	12.8		12.8

APPENDIX No. 13E

ROAD MILEAGES IN ONTARIO

As of March 31, 1962

	Total Miles	Type of Pavement					
		Concrete	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
King's Hwys.	9,435.9	337.5	6,810.8	1,623.0	664.6	.....	9,435.9
Secondary Hwys.	2,687.3	.....	100.1	550.7	2,019.0	17.5	2,687.3
Tertiary Roads	12.8	.....	.....	.....	12.8	.....	12.8
Total Provincial Highways	12,136.0	337.5	6,910.9	2,173.7	2,696.4	17.5	12,136.0

APPENDIX No. 14

DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1961

(Authorized by Part XI of The Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1961-62
93R	Athens–Charleston	5.0	County	Leeds and Grenville	$ 45,000.00
106R	Church Line Road	20.0	Galway and Cavendish	Peterborough	19,882.42
153R	Maynard South Augusta Road	6.0	Augusta	Leeds and Grenville	8,675.32
170	Perth Road	17.65	County	Frontenac	126,780.12
178	French Line Road	5.0	Darling	Lanark	14,382.20
202R	Champlain Road	4.0	Tiny	Simcoe	9,078.78
208R	Long Point Park Road	2.6	Long Point Park Commission	Norfolk	3,507.45
216R	Oro–Medonte Town-line	7.0	Oro and Medonte	Simcoe	43,376.96
287	Nepean Swamp Road	5.95	Nepean	Carleton	107,236.41
289	Mass Road–County Road No. 8 (part)	12.2	County	Frontenac	106,766.63
313	Centre Line Road	4.0	Plummer Add'l	Algoma	18,751.82
323	Lanark–Elphin Road	12.0	County	Lanark	80,793.24
336	Highgate–Highway 3	4.5	County	Kent	25,948.13
349	Athens–Mallorytown Road	3.0	County	Leeds and Grenville	40,716.55
361	Westport–Bedford Mills Co. Rd. 11 (part)	5.3	County	Leeds and Grenville	89,210.47
364	Flower Station–Darling Bdry. Road	6.8	Lavant	Lanark	16,194.22
382	Calton–Griffin's Corners	4.12	Bayham	Elgin	27,270.85
384	Mt. Forest–Shelburne	25.8	County	Grey, Dufferin and Wellington	361,173.05
392	Tamworth–Centreville Road	7.0	County	Lennox and Addington	30,131.18
406	North Gower River Road	6.5	North Gower	Carleton	1,075.50
409	Rosseau–Huntsville Road	9.5	Cardwell	Muskoka	45,873.29
415	Snow Road–Ompah	15.0	Palmerston and North and South Canonto	Frontenac	49,726.48
423	Grand River Road	11.11	County	Haldimand	66,460.93
435	Chisholm–East Ferris Boundary Road	9.5	Chisholm	Nipissing	14,153.47
450	Lilly's Corners–Lyndhurst	4.8	County	Leeds and Grenville	38,666.11
452	Vankleek Hill westerly	7.35	County	Prescott and Russell	57,910.78
453	Sydenham–Otter Lake Road	6.5	Loughborough	Frontenac	18,935.01
456	Fourth Line Road	1.0	Tarentorus	Algoma	23,625.11
457	Kushog Lake Road	6.5	Stanhope	Haliburton	17,960.12
460	Ridge Road	5.0	County	Hastings	29,411.02
461	Courtland–Port Rowan	19.0	County	Norfolk	318,226.05
463	Bird's Creek–Baptiste	5.5	Monteagle and Herschel	Hastings	29,842.55
467	Brackenrig Road	6.0	Watt	Muskoka	25,943.09
471	Alvinston–Courtright	30.75	County	Lambton	599,406.22
473	Balsam Road	3.0	Hagerman	Parry Sound	16,400.59
478	Bay Road	5.15	South Elmsley	Leeds and Grenville	10,878.75
479	Crow Lake Road	4.0	Oso	Frontenac	17,296.68
481	Fourth Line Road	.5	Korah	Algoma	1,854.49
483R	Goodfish Road	6.0	Teck	Cochrane	13,983.10
489	Fitzroy–Torbolton	3.8	Fitzroy–Torbolton	Carleton	313.48 Cr
491	Flesherton–Singhampton	15.8	County	Grey	121,112.66
495	Morganston–Cuff's Corners	11.0	County	Northumberland and Durham	21,081.77
496	Kendall–Garden Hill	7.25	County	Northumberland and Durham	141,426.55
498	Spanish River Bridge	.3	Salter, May, Harrow, Town of Massey	Sudbury	392,027.81
499	Dunlop–Blyth Road	14.5	County	Huron	53,206.42
500	Horseshoe Lake Road	6.5	Anson, Hindon and Mindon	Haliburton	23,629.13
502	Highway 7–Clandeboye	4.0	County	Middlesex	8,830.55

505	Katchiwano Lake Road	6.0	Smith	Peterborough	$ 17,976.69
506	Herbert's Corners–Gloucester	3.8	Osgoode	Carleton	224.35 Cr
513	Kiosk Road	7.0	Calvin	Nipissing	7,031.28
517	Pidgeon Lake Road	14.5	County	Victoria	68,732.42
518	Bannockburn–Cooper Road	4.5	Madoc	Hastings	22,267.32
523	Bar River Road	2.0	Laird	Algoma	18,271.70
524	McGarth–Clontarf	8.0	Gratton and Sebastopol	Renfrew	38,485.51
528	Sulphide–Tweed Road	5.3	County	Hastings	69,377.21
530	River Road	6.0	Salter, May and Harrow	Sudbury	23,593.09
531	Heart Lake Road	4.5	Chinguacousy	Peel	443.29
532	Sauble Beach By-pass	9.4	County	Bruce	60,834.49
533	Rose Point Road	1.8	Foley	Parry Sound	46,966.34
534	Manchester–Goodwood	12.7	County	Ontario	200,523.53
535	Hay Bay Road	6.0	South Fredricksburg	Lennox and Addington	27,697.06
538	Concession VI/VII	5.5	Westmeath	Renfrew	18,791.63
539	Hastings–Keene	12.5	County	Peterborough	299,452.16
541	Adamston–Bagot Townline	10.4	Adamston and Bagot	Renfrew	22,269.25
543	Concession VI VII	1.7	Williamsburgh	Dundas	2,429.60
545	Scoharie Road	9.3	County	Prince Edward	120,097.31
546	Doe Lake Road	2.5	Ryerson	Parry Sound	14,602.09
547	Millbank Road	12.0	County	Perth	190,728.18
548	Plevna–Ompah	6.7	Clarendon and Miller	Frontenac	37,033.25
550	Sideroad 15 16	5.0	Wollaston	Hastings	19,521.57
551	Harlowe–Arden (part)	3 0	Kennebec	Frontenac	18,929.52
552	Loretto Road	12.5	County	Simcoe	386,174.21
553	Sand Point Road	4.2	McNab	Renfrew	71,342.57
554	Concession IV/V	1.9	Derby	Grey	59,733.31
555	O'Brien Street	0.9	Widdifield	Nipissing	19,324.17
556	Plympton–Bosanquet	3.2	Plympton and Bosanquet	Lambton	38,204.47
557	Parham–Wagarville	4.4	Hinchinbrooke	Frontenac	31,083.15
558	Carp northerly	3.75	Huntley	Carleton	33,127.19
559	Concession IV/V	4.5	Lochiel	Stormont, Dundas and Glengarry	20,119.99
562	Shenson–Dobie	9.0	Municipality of Chapple	Rainy River	53,839.30
563	Webbwood Bridge and approaches	0.14	Hallam	Sudbury	48,792.33
565	Concession VIII	3.3	Cornwall	Stormont, Dundas and Glengarry	2,435.05
569	Madoc boundary west–Conc. VI	6.0	Marmora and Lake	Hastings	29,345.94
572	Warburton–Long Point	6.0	County	Leeds and Grenville	102,580.68
573	County Road No. 21	9.7	County	Stormont, Dundas and Glengarry	75,203.25
575	Glen Smail westerly	5.2	Edwardsburg	Leeds and Grenville	18,980.66
577	Smith's Falls–North Gower (part)	10.0	County	Lanark	70,314.24
578	Port Cunnington Road	4.5	Franklin	Muskoka	39,519.78
579	Bellamy Road	2.5	Pakenham	Lanark	3,443.59
580	Gooderham–Haliburton	11.1	Dysart et al and Glamorgan	Haliburton	175,553.90
582	County Road No. 65 (part)	2.0	County	Wellington	39,307.04
583	3 Bridges Con. II, III and IV	.....	Hallam	Sudbury	4,345.15
584	Sideroad 2/3 (part) Con. II/III (part)	3.0	McMurrich	Parry Sound	13,874.89
585	County Road No. 39 (part)	1.0	County	Elgin	1,289.82
586	Germanicus Road	4.75	Wilberforce	Renfrew	40,408.27
587	Havelock–Rush Point	4.0	Belmont and Methuen	Peterborough	146,620.53
588	County Road No. 1 (part)	10.	County	Hastings	357,418.38
589	Concession III IV Road (part)	1.2	Rawdon	Hastings	24,301.16
590	Wilson–Vennacher Road (part)	2.8	Clarence, Miller, Griffith, etc.	Renfrew	44,122.24
591	Detlor Road (part)	2.1	Dungannon	Hastings	20,930.76
592	Highway No. 62 to Locksley	5.7	Alice and Fraser	Renfrew	41,743.52
593	Wilson–Vennacher Road (part)	4.5	Denbigh, Abinger and Ashby	Frontenac	38,952.53
594	Huntsville–Rosseau Road (part)	8.0	Stisted and Stephenson	Muskoka	61,980.25
595	Highway No. 16 to District Hospital	0.25	Oxford-on-Rideau	Leeds and Grenville	3,156.68
597	Huntsville–Rosseau (part)	2.5	Chaffey	Muskoka	4,349.02

(Authorized by Part XI of The Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1961-62
598	Dalton Road	4.3	Mountjoy	Cochrane	$ 36,051.57
599	Concession IV-V Road	2.1	Thurlow	Hastings	24,934.93
600	Third Street, Elk Lake	0.4	James	Temiskaming	3,410.34
601	County Road No. 15 (part)	4.0	County	Ontario	20,000.00
602	Rose Corners to Cambridge boundary	3.6	County	Prescott and Russell	91,991.00
604	Middle River Road (part)	2.5	McKellar	Parry Sound	20,571.37
605	Concession II-III Road	1.25	Joly	Parry Sound	48,316.69
606	Vermilion Bridge westerly	3.5	Balfour	Sudbury	111,983.79
607	Victoria Road	0.7	Calvert	Cochrane	.....
608	Wilno to Radcliffe Boundary	2.7	Hagarty, Richards, Sherwood, etc.	Renfrew	23,908.16
609	Hornings Mills–Terra Nova (part)	7.1	Mulmur	Dufferin	19,578.97
610	Hornings Mills Bridge	0.9	Melancthon	Dufferin	6,631.32
611	River Road, Springdale	1.2	West Gwillimbury	Simcoe	320.60
612	Highway No. 26 to Washago Beach	4.5	Sunnidale	Simcoe	59,863.59
613	Fallbrook westerly	8.0	Bathurst	Lanark	26,642.86
614	Humphry Boundary northerly	1.0	Christie	Parry Sound	2,777.84
615	Brightside–Hopetown Road	3.8	County	Lanark	75,765.73
616	Odessa northerly	1.8	County	Lennox and Addington	91,347.17
617	Black River Bridge and approaches	0.5	Kingham I.D.	Temiskaming	17,653.48
618P.E.	County Road No. 3	12.0	East Garafraxa	Dufferin	32,042.59
619	Concession II/III Road	5.3	Chamberlain	Temiskaming	20,342.77
620	Genier Road	12.5	Glackmeyer	Cochrane	30,017.02
621	Vars to Osgoode Twp. Boundary	4.5	Cumberland	Prescott and Russell	5,147.41
622	Innisville Easterly Road	3.0	Drummond	Lanark	18,548.41
623	Bulger's Corners to 5th Line	2.5	Bromley	Renfrew	18,499.03
624	Maplewood Avenue	5.3	Shuniah (McIntyre)	Thunder Bay	19,435.03
625	Burritt's Rapids to County Road No. 26	5.8	Marlborough	Carleton	21,742.44
626	Tamsworth Easterly Road	4.0	Sheffield	Lennox and Addington	2,960.51
627	Concession I/II Road	1.2	Nassagaweya	Halton	1,534.64
628	Montee–Rouleau Road	2.75	Rayside	Sudbury	20,414.63
629	Concession VI/VII Road	2.5	Bonfield	Nipissing	18,128.88
630	Warren–St. Charles Road	1.0	Ratter and Dunnet	Sudbury	14,026.82
631	Cormac–Rochefort Road (part)	4.5	South Algoma	Renfrew	23,673.72
632	Harlowe southerly to Kennebec Boundary	0.7	Barrie	Frontenac	3,600.00
633	North Township Road No. 16A	3.5	Howe Island	Frontenac	1,427.96
634	Murrich–Perry East Con. VI/VII	1.25	Perry	Parry Sound	14,517.92
636	Malwood–County Road No. 20	1.75	March	Carleton	3,505.65
637P.E.	County Road No. 65	2.5	Erin	Wellington	1,850.00
638P.E.	Sideroad 5/6	6.0	West Gwillimbury	Simcoe	5,585.58
639P.E.	Morley/Shenston westerly	7.0	Morley	Rainy River	1,616.67
640P.E.	County Road No. 4 (part)	2.3	County	Lennox and Addington	2,036.21
641	Strong–Machar Townline	1.5	Strong and Machar	Parry Sound	9,853.87
642P.E.	County Road No. 16 (part)	8.5	County	Leeds and Grenville	.....
643P.E.	Concession II/III Road (part)	0.6	Gramahe	Northumberland and Durham	1,347.84
644P.E.	12 Mile Bay Road	8.0	Freeman	Muskoka	4,710.31
646P.E.	Bellrock Road (County Road No. 7)	6.1	County	Frontenac	1,952.80
651P.E.	Highway No. 16 to County Road No. 18	4.5	Oxford-on-Rideau	Leeds and Grenville	376.71
673P.E.	Concession II Road	1.5	Cramahe	Northumberland and Durham	1,362.74
	Preliminary Surveys — Various	.....	.....	.....	3,601.08
	Totals	875.32			$7,786,863.36

APPENDIX No. 15

ROAD MILEAGES IN ONTARIO, DECEMBER, 1961

	Total Miles	Type of Pavement				
		Concrete	Bituminous	Mulch	Gravel and Crushed Stone	Earth
King's Highways	9,437.20	353.20	6,712.90	1,611.10	760.00	.....
Secondary Highways	2,672.60	.....	93.00	476.60	2,109.00	.....
Total King's Highways	12,109.80	353.20	6,805.90	2,087.70	2,869.00	.....
County Roads	9,103.70	77.15	1,725.45	3,927.00	3,370.40	3.70
Organized Townships	51,328.96	55.63	1,537.53	2,685.53	40,460.93	6,589.34
Unorganized Townships	4,660.84	.....	1.10	8.05	3,560.45	1,091.24
Total Municipal Roads	65,093.50	132.78	3,264.08	6,620.58	47,391.78	7,684.28
Total All Rural Highways and Roads	77,203.30	485.98	10,069.98	8,708.28	50,260.78	7,684.28
Metropolitan Roads	322.16	1.80	319.42	.....	0.94	.....
City, Town and Village Streets	8,378.35	360.34	2,866.30	2,412.38	2,230.13	509.20
Total Urban Streets	8,700.51	362.14	3,185.72	2,412.38	2,231.07	509.20
GRAND TOTALS — 1961	85,903.81	848.12	13,255.70	11,120.66	52,491.85	8,193.48
— 1960	85,830.11	1,041.04	12,160.05	7,294.89	56,308.13	9,026.00
— 1959	85,526.75	1,148.66	11,419.11	6,271.03	57,093.14	9,594.81
— 1958	85,092.80	1,136.89	10,010.68	6,641.04	56,456.06	9,848.13
- 1957	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02
- 1956	83,508.24	1,337.88	9,188.73	5,750.73	56,597.11	10,433.76

CHRONOLOGY—DEPARTMENT OF HIGHWAYS

1961

March 7 — Department estimates for 1961–62 presented to the Legislature by Hon. Fred M. Cass, Q.C.

April 4 — Automatic Toll Machines installed at Burlington Bay Skyway.

July 10 — A contract was awarded for a new interchange at Highway 10 and the Queen Elizabeth Way. The interchange at Highway 10 and Q.E.W. was the first interchange built in Canada.

July 20 — A 28-mile section of Highway 401 from Port Hope to Brighton was officially opened to traffic.

September 28 — The Peterborough By-pass (Highway 7 TCH) was officially opened to traffic.

September 29 — A 10-mile section of Highway 401 from Highway 16 to Iroquois was officially opened to traffic.

October 2 — The second stage of the Ottawa Queensway from Carling Ave. to Highway 15 — four and one-half miles — was officially opened to traffic.

November 9 — A 25-mile section of Highway 401 from Highway 8 (Preston) to Highway 2 (Eastwood) was officially opened to traffic.

November 9 — Hon. W. A. Goodfellow appointed Minister of Highways.

November 20 — The Tilbury By-pass — four and one-half miles — section of Highway 401 was officially opened to traffic.

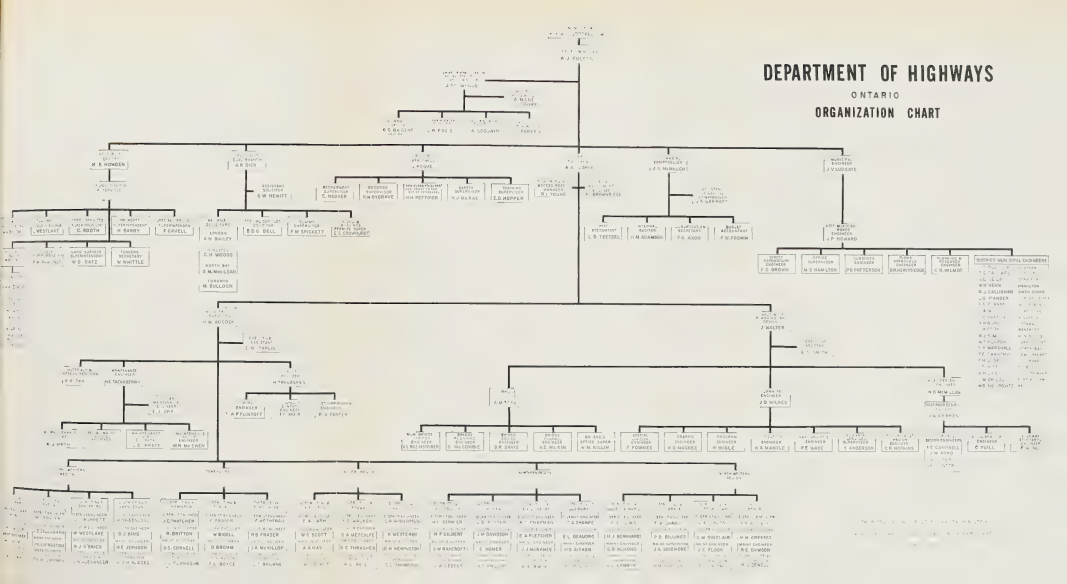
November 23 — Hon. W. A. Goodfellow announces the Government's decision to establish service centres along Highway 401.

December 5 — A seven-mile section of Highway 401 from Odessa to Highway 38, west of Kingston, was completed and opened to traffic.

DEPARTMENT OF HIGHWAYS

ONTARIO

ORGANIZATION CHART



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1962/63
Physical &
Applied Sci.
Serials

ONTARIO

Annual Report

OF THE

Department of Highways

ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

1963

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

1962/

Printed and Published by Frank Fogg
Printer to the Queen's Most Excellent Majesty
TORONTO
1963

Government Publications



ONTARIO

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PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

SESSIONAL PAPER NO. 20

Printed and Published by Frank Fogg
Printer to the Queen's Most Excellent Majesty
TORONTO
1963

To The Honourable W. Earl Rowe,
Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1963.

Respectfully submitted,

Charles S. MacNaughton,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
December 27, 1963.

To The Honourable Charles S. MacNaughton,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1963.

The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

A. T. C. McNab,
Deputy Minister.

Department of Highways, Ontario,
December 20, 1963.



Honourable Charles S. MacNaughton, Minister of Highways.

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William J. Fulton

IN MEMORIAM

William J. Fulton, B.A.Sc., O.L.S., P.Eng., former Deputy Minister of Highways, died on August 20th., 1962, following a brief illness.

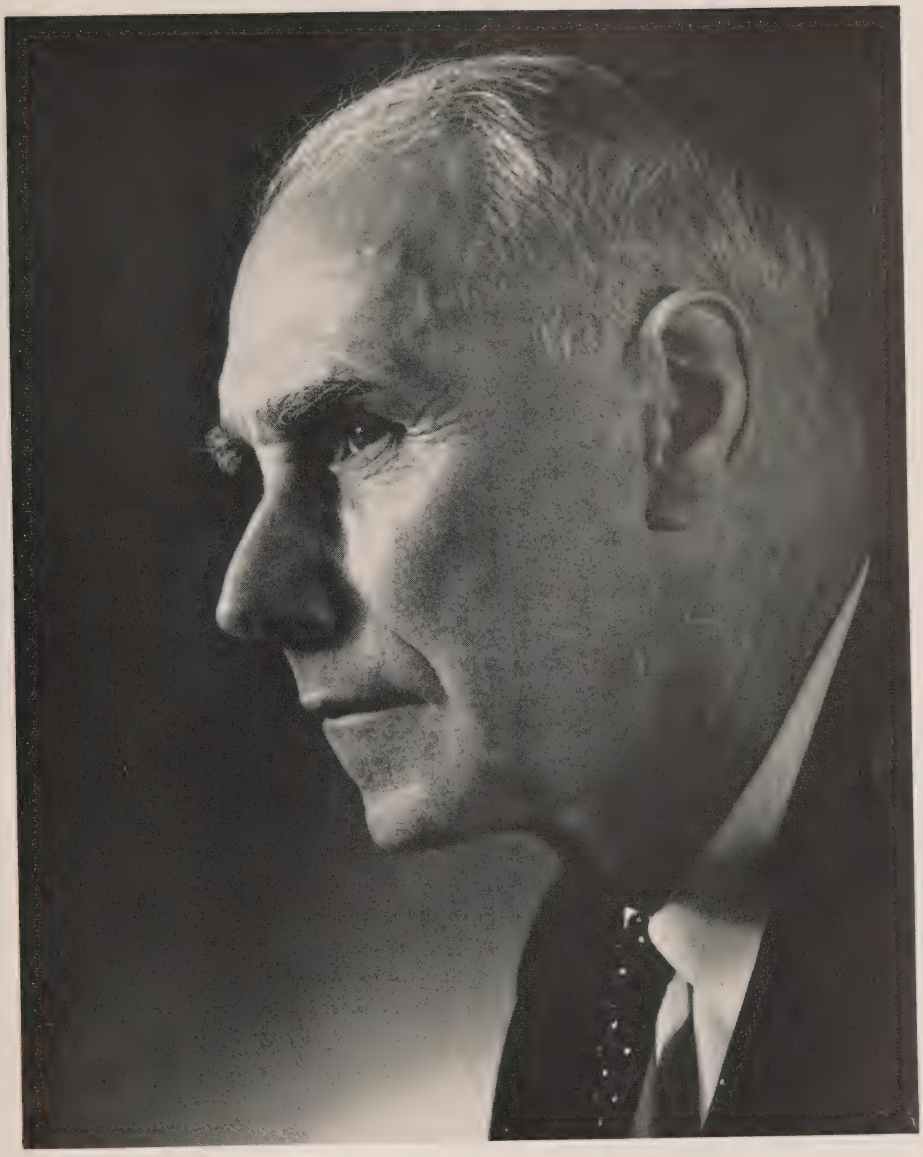
His death occured a scant month after his retirement after 41 years of outstanding service to the Highways Department and to the people of Ontario.

During his long and distinguished career Bill Fulton personified the finest traditions in the engineering profession. In his unassuming though determined way, he guided the Department to a place unexcelled in the world.

He pioneered aerial surveying. He streamlined traffic engineering techniques. He achieved international fame in 1956 when he published his "Plan for Ontario's Highways" which he followed in 1958 with the equally outstanding "Ontario's Roads and Streets".

For his contributions to the cause of improved roads, the Ontario Good Roads Association elected him honourary life member in 1960. The following year he received similar recognition from the Canadian Good Roads Association.

The trails he blazed in highway engineering and illuminated with a personality that made every man his loyal friend will always remain a well marked route for those who come after.



W. J. FULTON, B.A.Sc., O.L.S., P.Eng.

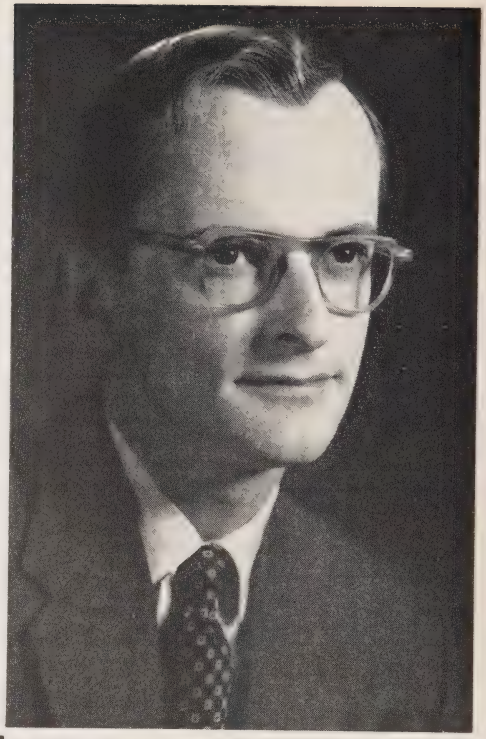
A. R. Dick, Q.C., B.A.

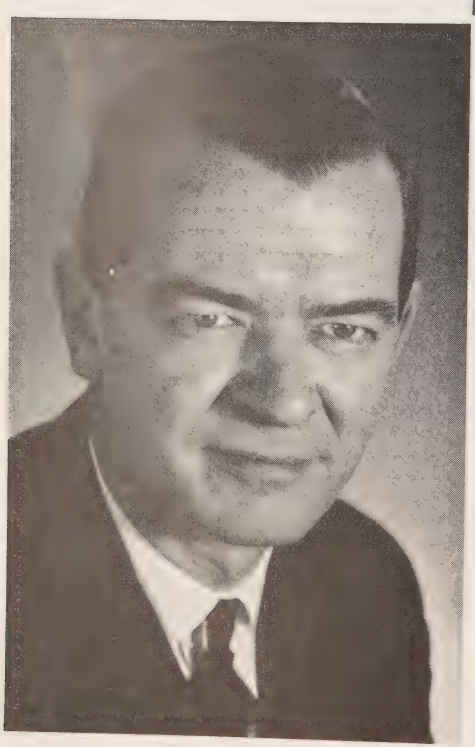
Archibald Rendall Dick was appointed Assistant Deputy Minister (Admin.) — a newly created post — in July 1962.

He joined the Department in 1955 as Senior Solicitor, and was appointed Director of Legal Branch in 1959.

Born in 1926 at Oakville, Rendall Dick was educated in Toronto, obtaining his B.A. from the University of Toronto in 1948. He read law at Osgoode Hall and was called to the Bar with honours in 1951.

Throughout most of his law studies Rendall Dick was articled to the Attorney General's Department and remained with that Department until his appointment to D.H.O.





H. W. Adcock, B.A.I., B.A., P.Eng.

On December 1, 1962, Hugh William Adcock was appointed Assistant Deputy Minister (Eng.), succeeding W. A. Clarke who retired at that time.

Hugh Adcock was born in 1923 at Regina, Sask., where he received his early schooling. After three years with the Royal Air Force overseas, he took his degrees of Bachelor of Arts and Bachelor of Civil Engineering at Trinity College, Dublin, Ireland the year in which he joined D.H.O. as Resident Engineer at Ottawa. After a year at Head Office as Assistant to the Maintenance Engineer he served in various capacities throughout the province until January 1957, when he was brought back to Toronto as Manager of Operations. After a year as Chief Highways Engineer, he was, in December 1962, appointed to his present post as Assistant Deputy Minister (Eng.).



W. A. Clarke, B.Sc., P.Eng.

After 32 years' service with D.H.O., William Alexander Clarke, Assistant Deputy Minister, retired from the Department on November 30, 1962.

Born at Ottawa in 1903, Bill Clarke was graduated from Queen's University, Kingston, in 1930 and joined D.H.O. that year as Construction Engineer in the Ottawa District.

During his career he served as Resident and District Engineer at Kingston, New Liskeard, Bancroft and Hamilton until his appointment as Assistant Chief Engineer in 1951. Two years later he became Chief Engineer and served in this capacity until his appointment, in 1961, to the newly created post as Assistant Deputy Minister.

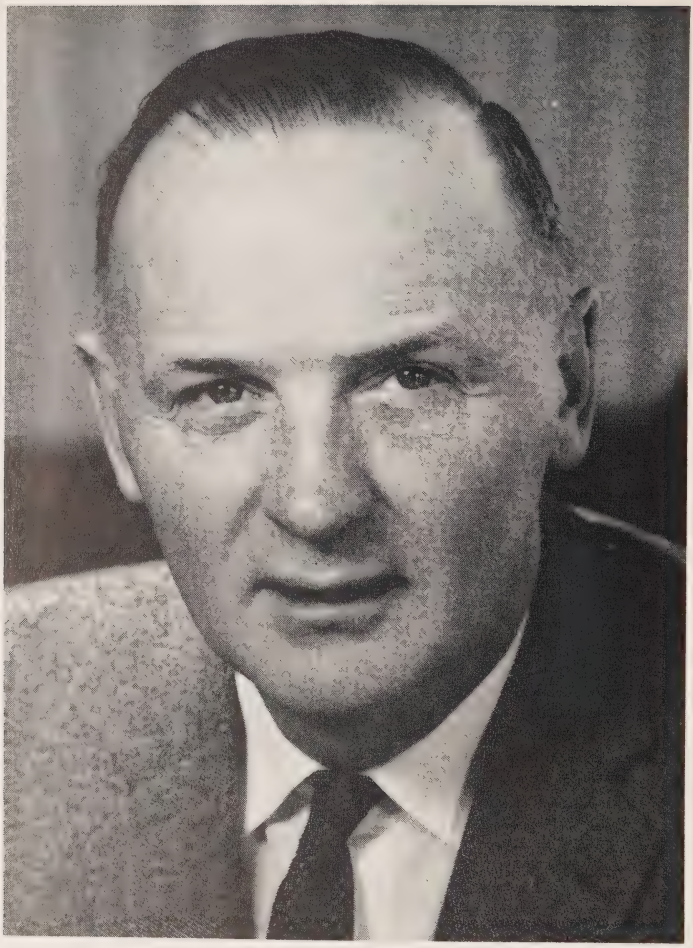


H. C. Tackaberry, P.Eng.

D.H.O. Maintenance Engineer since 1953, Harvey Carman Tackaberry retired on December 14, 1962, after 38 years — a career which began in 1924 when he joined the Department as an Instrument Man in the Ottawa District.

He saw most of his early service in Northern and Northwestern Ontario as Resident and District Engineer until 1952 when he was brought to Head Office as Assistant Maintenance Engineer. The following year he was made Maintenance Engineer for the Department.

Known as "Tack" to his friends and colleagues, he was born at Kemptville, where he also received his education.



A. T. C. McNab, Assistant Deputy Minister (Administration), was appointed Deputy Minister on July 4, 1962.

With more than 30 years' service in D.H.O., he has, in recent years, worked closely with the Minister and with the Deputy in the day-to-day operation of the Department.

Before moving to the Deputy Minister's staff in April, 1958, Cam McNab headed the Engineering Audit Section for four years. Prior to this he has had many years surveying experience, rising to supervisor of Location Surveys.

Born at Acton in 1913, Cam McNab attended school in Toronto, and joined the Department in 1933, where he has remained ever since with the exception of five years with the Canadian Army during the last war.

SUMMARY REPORT OF DEPARTMENT OPERATIONS

by A. T. C. McNAB, *Deputy Minister of Highways*

During the fiscal year the volume of highway construction in Ontario continued at a level comparing favourably with previous years. However, in some areas of the province a prolonged period of wet weather during the late summer and fall caused some delay in the completion of certain highway projects. This was particularly true of southwestern Ontario where the completion of the north lanes of Highway 401, between London and Tilbury, was delayed.

During the year, two sections of Highway 401 were opened to traffic adding 27 miles to the 377 miles which had been in use by the end of 1961. The newly opened sections are: a 13-mile section between Cornwall and Lancaster and 14 miles from Odessa to west of Napanee. Construction is well advanced on the remaining 106 miles of 401 which, when completed, will stretch across the southern part of the province from Windsor to the Quebec boundary, a distance of 510 miles.

Last October the first contract for the widening to 12 lanes of the Toronto By-pass section of Highway 401 was awarded for a one-mile section between Avenue Road and Hogg's Hollow. The over-all plan for the Toronto By-pass section of Highway 401 calls for the widening to 12 lanes of an 18-mile section from Islington Avenue to Highway 48. It is expected to take approximately six years to complete at an estimated cost of $63 million.

In the Spring of 1962, contracts were awarded for the building of eight service centres located at strategic points along Highway 401 between Belleville and London. Temporary service facilities at all locations were available by the end of July and the first permanent installation, located on the north side of Highway 401 eight miles east of Preston, was opened in January, 1963. It is estimated that permanent service centres at all eight locations will be in operation by early summer, 1963.

On the main Ontario route of the Trans-Canada Highway, 132 miles were being constructed to meet or better the standards set for this highway by the Canadian Government. By the end of the year paving had been completed on 41 miles, and grading was completed on approximately 57 miles. Construction of eight new bridges was also completed in 1962.

Widening of the Queen Elizabeth Way to six lanes between Highway 10 and the Mississauga Road and the construction of a new interchange at Highway 10 and the Q.E. Way were completed in October. The new interchange replaces Canada's first cloverleaf-type interchange constructed at this location in 1937.

Other major projects in Southern Ontario on which work is progressing are: The $20 million Homer Skyway, steel work on which project was completed in November and by the end of the year all contracts had been awarded for the construction of this mammoth project; Highway 403 from the Queen Elizabeth Way to Longwood Road in Hamilton, and Highway 405 from the Queen Elizabeth Way to the new Queenston-Lewiston bridge. These projects are slated for completion and opening in 1963.

In October the $20 million Sault Ste. Marie International bridge was officially opened.

Before the end of the year traffic was using the $6 million Rainy Lake Causeway located at the western end of the 85-mile Highway 11 extension from Atiko-

kan to Fort Frances. Construction is now under way on 49 miles of this route and the remaining 36 miles will be under construction before the end of 1963.

The Highway 101 extension from Foleyet to Chapleau, a distance of 61 miles, was opened to traffic last June and construction continues on this route between Chapleau and Trans-Canada Highway 17, at Wawa.

Under the "Resources Roads" program, work continued on the Spruce River Road running north from Trans-Canada Highway 17, just east of Port Arthur, and by July 54 miles of this route had been completed and opened to traffic. Before the end of the year work was far enough advanced on the Savant Lake Road to connect with a network of private timber company roads, thereby providing access between TCH-17, in the vicinity of Ignace, to Pickle Crow. In December the awarding of a clearing contract from Central Patricia northerly for 10 miles signalled the start of construction of a new resources road from Central Patricia to Lingman Lake.

This year a new type of road, known as an "Industrial Road", was added to Ontario's northern highway network. These are privately-owned roads which are opened to the public in return for partial provincial subsidy toward their maintenance. The first road to be so designated, between Manitouwadge and Caramat, a distance of 55 miles, was opened in October.

Contracts Completed

During 1962–63 capital contracts were completed on 454 miles of grading, 372 miles of hot mix paving and 85 structures. Completed capital contracts totalled 284 and maintenance contracts totalled 153.

Some 268 capital contracts and 153 ordinary (maintenance) contracts were awarded in 1962–63. New capital work included 509 miles of grading, 362 miles of hot mix paving and 87 structures of various types. Maintenance contracts covered 19 for hot mix paving, 10 for surface treatment and 18 for winter sanding.

Index

The index of tender prices paid on road contracts rose during the year indicating somewhat higher unit prices. The index was 129.0 for 1962–63 as compared with 112.3 in 1961–62 and the ten-year high of 156.8 in 1956–57.

The index of prices for road materials purchased by the department decreased from 113.9 in 1961–62 to 110.3 in 1962–63.

Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	Fiscal Years Ending	
	March 31, 1963	March 31, 1962
Gross capital payments on construction of King's Highways and Secondary Highways	$124,945,522	$131,833,293
Less: Recoveries on (1) Trans-Canada Highway, (2) Ottawa Queensway, (3) Railway Bridges, (4) Niagara Falls Bridge Commission, (5) City of Ottawa	7,768,418	16,200,809
Net capital payments on construction of King's Highways and Secondary Highways	$117,117,104	$115,632,484
Ordinary expenditure on King's Highways and Secondary Highways including maintenance and general operating expense	48,899,218	46,998,312
Provincial subsidies on municipal roads and streets and cost of development roads and roads in unincorporated townships	85,076,423	80,607,404
Total Net Expenditures	$251,152,745	$243,238,200

Information Section

R. G. Baigent, Information Officer

A primary function of the Information Section is to keep the public informed about significant plans of the department, work in progress, major projects completed and ready for traffic, technical advances and other matters of general interest. The section is the chief source of such information and the principal agency for its dissemination.

A basic objective is to make such information available in a manner that will gain public understanding of the department's problems, thereby gaining support for its over-all program.

The most tangible illustration of one of the ways in which the Information Section goes about accomplishing this objective is found in the press releases and fact sheets which it prepares and distributes to the press, radio, and TV stations. Companion items are photos — which it selects and for which it writes captions — and special maps prepared under its direction.

In recent years, the volume of such material has increased noticeably. In the fiscal period covered by this Annual Report, some 65 press releases were issued, as well as numerous fact sheets. Because two or more construction projects, often at widely separated points, were sometimes completed on or about the same date, it was not unusual for three different releases to be sent out on the same day.

One of the more ambitious releases is an annual Round-Up Report of construction carried out during the current year. The 1962 edition, running to eight pages, was widely used by the daily newspapers of Ontario and the representative list of weeklies throughout Ontario.

A press conference of special interest was one in November at which Prime Minister John Robarts and Highways Minister Charles S. MacNaughton jointly proposed a $10 million tunnel under the Welland Canal to improve highway facilities in the Welland area. Another was the customary press conference prior to the presentation to the Legislature of the Highways Estimates.

The first of two of the larger official openings in which the Information Section was involved, was held at Goderich in July in connection with the reconstruction of Highway 21, including an impressive new bridge over the Maitland River. The other was the official opening, on October 31, of the $20 million Sault Ste. Marie International Bridge, in which case there was close liaison with the International Bridge Authority and the Michigan State Highway Department, especially with respect to the co-ordination of the publicity effort, shared by the three jurisdictions.

With the general upward trend in the annual net expenditures of the Department of Highways, the *total* story of the department's operations has similarly grown, as reflected in a growing public interest in highway matters generally. The explanation probably lies in the fact that today practically everyone is affected either directly or indirectly by the roads within the King's Highway system. The result is an ever-growing demand upon the Information Section for all manner of information.

A specific example is the continuing stream of requests from students at all

levels for assistance in carrying out school projects on various aspects of highways. Frequently, photos to illustrate the material are also solicited. This type of request has become much more numerous over the past two years.

Throughout the year, special articles were prepared for newspapers and magazines, and photos selected for appropriate illustration of the material.

Another service was making material available to feature writers, arranging interviews with appropriate departmental personnel, assisting them in the selection of photos and otherwise serving in a liaison capacity.

In the fiscal year, 10 issues of the department's employee magazine, the "DHO *News*" were published.

At the level of *internal* public relations, the Information Officer, or one of his staff, lectured to students at the DHO Training School. In these talks, emphasis was placed on the way in which the public tends to judge the entire department by the attitudes of its employees and the manner of their contacts with the public in carrying out their work.

The Information Section obtained effective publicity for the 1963 Official Road Map of Ontario, thus assisting in its widespread distribution.

Between May and November, the Official Road Bulletin of Ontario was published every two weeks by the Information Section. An additional service in the summer season, much appreciated by the news media, is the delivery each Thursday of a Week-end Road Report which lists any points at which inconvenience may be experienced by motorists. These reports are widely distributed by Canadian Press and much appreciated by the weekly newspapers.

The compiling, layout, editing and publication of the Annual Report is also the responsibility of the Information Section.

Electronic Computing Centre

A. E. Goodwin, P.Eng., Manager

During the fiscal year April 1, 1962, to March 31, 1963, the Electronic Section processed a variety of jobs in many key areas of the Department of Highways. Some of the volume can be seen from the following list:

Planning and Design Branch

Road Design Section	Total Jobs
Quantity Calculations	11
Profile Grade and Edge of Pavement Elevations	33
Horizontal and Vertical Curve Calculations	4
Compute and plot Load Graphs	7
Compound Spiral Data for Intersections	1
Interchange Connections	23
TOTAL	79
Bridge Office	
Geometrics and Elevations on straight alignment	83
Solution of simultaneous equations and matrix inversion. Fixed Decimal	155
Single-span rigid frame design	146
Reinforcing steel quantities	228
Geometrics and Elevations on a circular alignment	48

	Total Jobs
Bridge Office	
Geometrics and Elevations of skew bridges with parallel piers on a circular alignment	39
Geometrics of radial bridge piers on transition curves	24
Single box culvert design	4
Composite beam design (welded plates)	35
Composite beam design (WF sections)	17
Bridge Clearances	7
Offsets to a curve from a straight line perpendicular to a radius	8
Frame constants for continuous bridges	223
Truck live and dead load moment envelopes for continuous bridges	256
Lane live and dead load moment envelopes for continuous bridges	245
Influence lines for moments and shears for one-span bridges	26
Influence lines for moments and shears for two-span bridges	54
Influence lines for moments and shears for three-span bridges	237
Influence lines for moments and shears for four-span bridges	69
Influence lines for moments and shears	131
Live load, shear and reactions for continuous bridges	149
Live load deflections for continuous beams	83
Truss Analysis (simple trusses only)	17
Concrete quantities	133
Moment of inertia and stresses for composite beams	3
Composite beam analysis (wide flange) single span	54
Properties of plate girders	72
Dead load deflections for continuous beams	183
Temperature, shrinkage and sidesway analysis	22
Design of round columns subjected to biaxial bending	58
Design of rectangular columns subjected to biaxial bending	44
Prestressed Beam analysis (any section) (Pretensioned)	176
Elevations on a straight alignment with tangent runout	86
Single Box Culvert analysis	8
Pavement Edge Elevations on vertical and horizontal curves	129
Geometrics and Elevations on horizontal curves	72
Elevations of Parallel Girders on a horizontal curve	34
Offsets to a circular curve	272
Offsets to a spiral	17
Offsets to bent girders	16
Retaining Wall design and analysis	82
Girder splice design	8
Rigid Frame pier design	3
Analysis of Continuous Prestressed Concrete Bridges	26
Friction and anchorage losses in continuous prestressed girders	12
Isostress lines	
H20-S16 load tables	4
Tables for eccentrically loaded circular columns	1
Hydrology tables	20
Job Costing Data	
TOTAL	3865
Traffic Section	
Origin and Destination Surveys	50
Transportation Studies	75
Annual Average Daily Traffic Counts	244
Traffic Lane Distributions	2
Traffic Study	2
TOTAL	373
Location Survey Section	
Photogrammetry Graph Plotting	2
Bridging Procedures	16
TOTAL	18

Statistics Section	Total Jobs
Mileage Log	18
Highway Inventory Log	19
Railway Crossing Log	17
Structure Log	3
Financial Log	1
Trends in Municipal Expenditures	4
TOTAL	62

Planning Section	
Planning Program for Years — 1956	1
" " " " — 1961–1962	5
" " " " — 1962–1963	22
" " " " — 1963–1964	24
" " " " — 1964–1965	16
" " " " — 1966–1967	10
" " " " — 1967–Later	26
TOTAL	104

Operations Branch

Final Pay Section	Total Miles	Total Jobs
Final Quantity Calculations	263.4	77
Original Quantity Calculations	196.1	40
TOTAL		117

Materials and Research

C.G.R.A. — Data Tabulation
C.G.R.A. — Pavement Evaluation

Services Branch

Land Survey Section		Acquisitions	Properties	Courses	Jobs
Toronto:	Original Surveys	381	1,304	13,313	74
	Revised Surveys	167	180	6,644	15
Kingston:	Original Surveys	838	857	49,429	400
	Revised Surveys	95	95	7,530	50
London:	Original Surveys	315	353	9,443	30
	Revised Surveys	8	17	630	1
North Bay:	Original Surveys	327	371	11,349	91
	Revised Surveys	171	169	6,465	30
Ft. William:	Original Surveys	487	528	17,078	85
	Revised Surveys	160	169	6,806	27
TOTALS:	Origianl Surveys	2,348	3,413	100,612	
	Revised Surveys	601	630	28,075	

Equipment Section	Total Jobs
Monthly Equipment Costs for 32 districts	332
Equipment Costs Quarterly Summaries	4
Inventory listings	75
Depreciation listings	3
TOTAL	414

In addition to the above "routine" work, the regular activity associated with the accounting function in the department was handled. This includes cheque writing and signing, the latter operation performed by means of master signature plates which print the authorized signatures during the final stage of cheque preparation.

The many reports required for the Personnel Branch were also done, in addition to the detailed list, as were such items as Highway Log, Highway Inventory, Railway Log, Equipment Reporting, Municipal Studies, Program Reporting, Road Counter Tape Card Punching and many other items too numerous to mention in detail.

Studies were begun or continued in traffic work and the system now underway for Traffic Data Processing is very advanced in concept and execution.

Experience dictated a need for faster equipment for both calculating and report writing. An order was placed with International Business Machines Corp. for delivery of an IBM 7040 high-speed computer in the fall of 1963 with a capacity greatly in excess of the current IBM 650 computer. In fact the new computer will, in many operations, produce results in one minute that normally took one hour. This means the centre can do complex studies requiring lengthy runs on the 650 in a few minutes and, in effect, moves the Department of Highways into the enviable position of being able to use management by exception principals in many areas of work. In addition, a sophisticated system of highway planning, design and construction will be possible which integrates this major task into a complete whole. With the additional power, which will come from the Photogrammetry Section, which can provide direct input of terrain data from aerial photographs, the department can enter a new and fascinating phase of development capable of saving many thousands of dollars by ensuring "best" roads placed where they are most needed.

A new high-speed printer-computer, the IBM 1401, was delivered at the end of March, but will not be operational until early April 1963. This computer will make it possible to write reports more quickly than before.

The problem of preparing for the new computer has involved retraining of staff and the reprogramming of many problems. The retraining is now complete and much of the rewriting is also complete. We look forward to the arrival of the new computer, as it will enable us to be of great assistance to all sections of the department.

Legal Section

Solicitors

A Senior Solicitor and a Special Services Solicitor are located in the main office of the Department at Toronto to prepare agreements and other legal documents and to provide legal services and advice to the various branches of the Department and to assist and advise the regional solicitors when necessary. There are regional solicitors in the regional offices of the Department at Kingston, London, North Bay and Toronto to prepare or approve deeds and other documents and to advise the personnel of the regional and district office in legal matters.

Sign and Building Permits Section

I herewith submit for your information, the following report for the Fiscal Year 1962-63.

Building Permits:

Number of Permits issued	4,834
Approximate valuation of buildings	$115,592,668.00

Gasoline Pumps:

Number of Permits issued	472
Permit fees	$ 4,765.00

Sign Licences:

Number of Licences issued	5,449
Value received	$ 31,000.00

NOTE. — Licences are issued according to the calendar year January 1st to December 31st.

Entrance Permits:

Number of Permits issued	175

SB-PR-61 Permits:

Number of Permits issued	860

BUILDING PERMITS ISSUED

Controlled Access Highway:

Number of Permits issued	442
Value of Building Permits for Fiscal Year	$ 49,835,466.00

King's Highway Permits:

Number of Permits issued by all Districts	4,249
Value of King's Highway Building Permits	$ 65,747,262.00

NUMBER AND VALUE OF KING'S HIGHWAY PERMITS ISSUED

DISTRICT	NUMBER ISSUED	VALUE OF PERMITS ISSUED
Chatham	398	$6,028,430
London	274	3,059,743
Stratford	247	3,316,223
Hamilton	437	8,303,211
Owen Sound	257	3,365,050
Toronto	197	15,806,804
Port Hope	221	4,286,891
Kingston	242	4,539,399
Ottawa	193	2,934,700
Bancroft	161	1,394,157
Huntsville	240	2,383,366
North Bay	519	1,992,897
New Liskeard	73	737,140
Cochrane	194	949,039
Sudbury	174	2,326,150
Sault Ste. Marie	143	2,010,650
Fort William	81	688,925
Kenora	198	1,624,487

FIELD ADVERTISING SIGN PERMITS ISSUED

Gross Revenue	$32,623.50
Number of Field Advertising Sign Permits issued for Fiscal Year	5,449
Value of Field Advertising Sign Permits issued for Fiscal Year	$31,000.50

NOTE. — Permits are issued for the calendar year.

GASOLINE PUMP PERMITS ISSUED

Gross Revenue	$ 4,997.00
Number of Gasoline Pump Permits issued for part of Fiscal Year	472
Value of Gasoline Pump Permits issued for part of Fiscal Year	$ 4,765.00

NOTE. — Permits are issued for the calendar year.

Engineering Audit Section

The Engineering Audit Section is broken down into two main groups: Field Audit and Contract Checking. The field staff is established on a regional basis, with one regional supervisor, one assistant supervisor, two field parties, a weigh inspector and an office draftsman in each region. These people conduct routine spot checks by survey and by examination of records on all pre-engineering projects and construction contracts in the various districts. The weigh inspector conducts routine spot checks on weighing operations, both on construction and maintenance contracts.

The prime function of the Contract Checking Office is the approval of all payment quantities, subject to the payment limitations outlined under the contract tenders. Upon completion of the final review by the Contract Checking Group, a report is prepared embodying the approved final payment quantities, for the direction of the District Engineer, and Head Office. These reports, in addition to verifying final payment quantities, outline deficiencies in the records and the methods of payment, and are instrumental in improving the standard of records and payments on subsequent contracts. In addition, the Contract Checking Supervisor is responsible for the preparation of plans and profiles, showing the latest "as constructed" data which is derived from the construction records. The preparation of these plans and profiles was initiated in 1957, and since that date, these records have progressively proven their value in the settling of contractors' claims and the redesign of existing roads.

For the fiscal year 1962–1963, the following table lists, by districts, the number of construction and maintenance contracts, checked with their total monetary value.

	Construction		Maintenance		Invitation Bid	
	No.	Value	No.	Value	No.	Value
Chatham	26	$ 5,547,488	9	$ 186,239	4	$ 23,829
London	26	8,519,004	8	175,338	6	145,963
Stratford	15	3,631,881	9	127,793	10	40,988
Hamilton	17	4,041,446	16	563,352	6	136,027
Owen Sound	4	376,397	9	194,337	3	23,108
Toronto	20	4,328,359	21	768,819	16	89,388
Port Hope	8	2,036,975	12	230,515	6	341,704
Kingston	23	4,908,974	8	296,977	1	1,698
Ottawa	16	5,663,790	9	184,060	10	73,962
Bancroft	11	1,270,810	7	108,823	....	.....
Huntsville	13	2,906,794	8	117,831	....	.....
North Bay	10	976,530	5	107,336	1	3,550
New Liskeard	18	1,959,238	3	59,239	....	.....
Cochrane	3	1,321,113	3	84,692	1	7,688
Sudbury	9	1,636,923	10	152,710	7	53,196
Sault Ste. Marie	8	1,731,412	5	69,518	1	74,845
Fort William	11	3,152,914	1	13,491	....	.....
Kenora	13	4,615,630	4	63,928	....	.....
Totals	251	$58,625,678	147	$3,504,998	72	$1,015,946

In the past year the Engineering Audit Section has conducted a number of spot checks on the field work and payment calculations for Development Road contracts, and day labour projects. This work was performed on the instructions of the Deputy Minister, and copies of the audit report were circulated to the various municipal engineers, both at Head Office and in the districts, as well as the municipal officials involved such as road superintendents, county engineers, etc. No attempt was made to have the records and measurements adhere to

D.H.O. standards and methods, but instead, a report was submitted outlining only the methods used. At the end of the year a general report was prepared, summarizing the findings for the past construction season. Further action is to be taken during the forthcoming year, based on the findings of this report. In addition to extending our checks to development roads, we have conducted a number of spot audits on Connecting Link construction contracts, which are subsidized 100 per cent by the Department of Highways, and reports similar to the Development Road projects were submitted on these, with copies to the various officials involved, both in the Department and in the municipalities.

In spite of the heavy increase in the number of projects and contracts reviewed during the past year, the total staff in the Engineering Audit Section has decreased slightly from the previous year. This has been made possible by a closer integration of the Field Audit and Contract Checking staffs. Since most actual construction takes place in the approximate six- to- seven-month period, from May to October or November, the submission of final estimates from the districts is heaviest during the winter months. For this reason, it was possible to move people from the Contract Checking Office to the field during the construction season, to aid in the spot check surveys and review of field office records during these months. In a similar manner, and due to the sharp decrease in actual construction in the winter months, it was possible to transfer field staff to the Contract Checking Group, to cope with the heavy influx of final estimates during the winter months.

The Estimating Review Group, which is based at Downsview, continued its routine spot check in detail of various pre-engineering estimates and final estimates which had previously been processed by the Contract Checking Group. In addition to the routine duties, they continued the checking and examination of various other calculations pertaining to force accounts, work orders, and claims.

REPORT OF THE FINANCIAL COMPTROLLER

COMPTROLLER, J. G. McMILLEN, C.A.

The following statements outline the expenditures and cash receipts of the Department of Highways, Ontario, for the year ended March 31st, 1963.

I. Ordinary Expenditure
II. Capital Payments, including Expenditure Summary
III. Trans-Canada Highway
IV. The "Queensway" — Ottawa
V. Receipts
VI. Comparison of Average Unit Prices Paid on Contracts
VII. Burlington Bay Skyway

Total Expenditure

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at $251,152,745. The following is a comparison of total expenditures with previous years:

1958	$212,764,943	1961	$237,994,017
1959	227,547,235	1962	243,238,200
1960	248,514,195	1963	251,152,745

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement III in the amount of $201,608,730
with funds recovered or recoverable of 107,024,977

and a net cost to the Department of ..... $ 94,583,753

Recoverable Expenditures

Within the fiscal year, the Department recovered $15,387,334, made up as follows:

Trans-Canada Highway		$ 3,958,997
Ottawa Queensway — Dominion Government	$951,729	
— City of Ottawa	900,000	1,851,729
Railway Bridges		1,457,692
Niagara Falls Bridge Commission		500,000
Total of items detailed in Statement II		$ 7,768,418
Dominion-Provincial Resources Roads		1,391,384
Ontario Department of Mines		900,537
Sundry Items credited to Expenditure or to Revenue		5,326,995
		$15,387,334

Pre-qualification of Contractors

During the year the procedures governing the qualification of contractors were modified. The changes included a revision of the formula used to determine a contractor's rating and the enforcement of penalties reducing such rating. Penalties may be incurred: (a) where the quality of a contractor's work on

Department of Highways work is unsatisfactory; (b) where the contractor fails to comply with specifications, procedures, conditions or such other standards as the Minister deems reasonable.

Of the 270 capital contracts awarded during the year, 130 or 48.1% required the pre-qualification of contractors. An average of 7.3 bids were received on pre-qualified contracts as compared with 5.4 bids on unqualified contracts.

Indices of Tender Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted, showing:

Index of Tender Prices paid on Road Contracts (Charts I–II) and

Indices of Tender and Material Prices (Chart III)

It is evident from these indices that unit prices on contracts awarded have increased, while prices paid for road material slightly decreased during the year.

Burlington Bay Skyway

The accompanying statement indicates a continued upward trend in revenue and in the number of vehicles using the Skyway.

STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Years Ending March 31, 1963 and March 31, 1962

	Year Ending March 31, 1963		Year Ending March 31, 1962	
Maintenance of King's Highways and Secondary Highways —				
Winter Maintenance —				
Contract and day labour	$15,656,387		$14,878,279	
Equipment operating costs due to standby (60%)	215,192		177,422	
Summer Maintenance —				
Patrol costs	9,964,534		10,074,230	
Gravel crushing, contract and day labour	810,847		816,481	
Prime, contract and day labour	552,817		569,514	
Hot mix patching, contract	833,834		706,399	
Surface treatment, contract and day labour	485,748		700,024	
Mulch, day labour	39,791		41,091	
Major bridge repairs	255,401		362,936	
Salt shed construction	.....		16,404	
Equipment operating costs due to standby (40%)	143,461		118,281	
Operation of ferries	347,206		310,451	
Floods and other emergencies	10,183		19,031	
District office overheads, including engineering, warehouse and municipal	7,242,096		6,744,431	
Net cost of equipment rented to municipalities	.....		65,073	
Expenditures recovered, but credited to revenue	208,976		178,422	
Increase in inventories	220,902		108,771	
		$36,987,375		$35,887,240
Repaving of present roads		1,417,624		379,484
Maintenance of development roads		110,366		162,845
Maintenance of roads in unincorporated townships in Northern Ontario		674,365		711,500
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)		$39,189,730		$37,141,069

STATEMENT I (Cont'd)

General Operating Expenditures —				
Purchase of new trucks, tractors, graders, plows and other road equipment	$ 2,412,774		$ 2,642,562	
Printing and stationery	979,287		857,267	
Office furniture and equipment	333,762		382,841	
Workmen's compensation	279,790		250,602	
Insurance and claims	238,148		250,110	
Unemployment insurance stamps	248,106		260,472	
Maintenance of buildings and area office rentals	389,978		403,921	
Bus rentals	67,547		67,518	
Teletype rentals	92,460		84,937	
Staff training	103,411		80,131	
Recoverable expenditures (net)	20,075		(21,080)	
Central stores, increase in stock	66,848		5,768	
		$ 5,232,186		$ 5,265,049
Head Office —				
General administrative and operating staff salaries	$ 3,989,547		$ 3,980,508	
Travelling expenses	281,320		315,993	
Electronic section salaries and equipment rentals	154,404		171,502	
Sundry	518,078		675,102	
		$ 4,943,349		$ 5,143,105
Road publicity, etc.		136,765		117,435
Burlington Bay Skyway, toll collection costs		181,919		205,999
Municipal Subsidies —				
County roads	$ 5,785,610		$ 5,234,623	
Township roads	12,663,942		11,730,612	
Cities, towns and villages	10,650,747		8,827,510	
		$29,100,299		$25,792,745
TOTAL ORDINARY EXPENDITURES		$78,784,248		$73,665,402

PER PUBLIC ACCOUNTS

Total Ordinary Expenditures per Public Accounts	$78,784,248		$73,665,402	

STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Years Ending March 31, 1963 and March 31, 1962

	Year Ending March 31, 1963		Year Ending March 31, 1962	
Construction of King's Highways and Secondary Highways —				
Payments to contractors	$61,429,223		$62,471,625	
Materials and sundry contract expenditures	28,109,933		35,903,213	
Engineering	10,534,938		10,029,475	
		$100,074,094		$108,404,313
Construction of development roads		7,607,178		7,624,018
Construction of roads in unincorporated townships in Northern Ontario		453,852		566,889

STATEMENT II (Cont'd)

Expenditures allocated to the above roads —				
Property purchases	$ 8,726,284		$ 8,847,209	
Land surveys	1,847,359		1,801,163	
Planning and design	4,534,305		3,596,917	
		$ 15,107,948		$ 14,245,289
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)		$123,243,072		$130,840,509
Expenditures of Head Office branches unallocated and not included above:				
Property	$ 1,566,711		$ 1,464,210	
Land surveys	1,065,874		1,025,480	
Planning and design	3,449,695		3,268,955	
Construction of new buildings	1,054,083		704,590	
Soils testing and research	2,551,124		2,200,645	
Engineering audit	688,692		662,906	
Increase (decrease) in Bailey bridge and steel inventories	(36,736)		219,698	
Recoverable expenditures (net)	(1,025,062)		(762,188	
Electronic Section, salaries and equipment rentals	427,872		367,816	
Sundry	21,227		31,579	
		$ 9,763,480		$ 9,183,691
Municipal Subsidies:				
County roads	$ 13,240,269		$ 11,944,793	
Township roads	13,418,678		13,188,476	
Cities, towns and villages	20,471,416		20,616,138	
		$ 47,130,363		$ 45,749,407
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION		$180,136,915		$185,773,607
Less Recoveries:				
Trans-Canada Highway	$ 3,958,997		$ 11,623,549	
Ottawa Queensway —				
Dominion Government	951,729		1,380,118	
City of Ottawa	900,000		900,000	
Railway Bridges	1,457,692		1,797,142	
Niagara Falls Bridge Commission	500,000		500,000	
		$ 7,768,418		$ 16,200,809
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS		$172,368,497		$169,572,798

EXPENDITURE SUMMARY

Ordinary expenditure	$ 78,784,248		$ 73,665,402	
Capital payments, net	172,368,497		169,572,798	
		$251,152,745		$243,238,200
TOTALS		$251,152,745		$243,238,200

STATEMENT III

TRANS-CANADA HIGHWAY

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Dominion Government on April 24, 1950.

	Refundable by Dominion Government	Expended by Department
Refunded by Dominion Government on account of work performed prior to April 14, 1950	$ 1,569,640	
Year ending March 31, 1951	2,749,329	7,043,559
" " " 1952	3,453,866	8,242,801
" " " 1953	4,103,753	11,746,130
" " " 1954	2,486,860	9,686,452
" " " 1955	6,274,487	5,675,343
" " " 1956	3,365,959	9,602,299
" " " 1957	4,855,053	13,996,280
" " " 1958	12,381,361	20,683,306
" " " 1959	15,803,757	27,995,777
" " " 1960	17,662,423	28,412,552
" " " 1961	16,500,840	24,786,757
" " " 1962	11,623,549	16,168,477
" " " 1963	3,958,997	8,164,528
Expenditure by Department for property and other non-recoverable expenditures		9,404,469
Totals to March 31, 1963	$106,789,874	$201,608,730
Further claims to be submitted based on expenditures to March 31, 1963 — Claim No. 118	$ 155,103	
" No. 119	80,000	
Total Refunds by Dominion Government		$107,024,977
Net Estimated Cost to March 31, 1963		$ 94,583,753

STATEMENT IV

THE QUEENSWAY—OTTAWA

The following statement sets out expenditure and amounts recoverable on the "Queensway," Ottawa since the signing of the Agreement with the Dominion Government, the Federal District Commission and the City of Ottawa on March 19, 1957.

Expended by Department:		
Year ending March 31, 1958	$ 563,956	
" " " 1959	1,720,076	
" " " 1960	3,860,475	
" " " 1961	5,723,245	
" " " 1962	3,889,962	
" " " 1963	3,778,739	
		$19,536,453
Recovered from Dominion Government:		
Year ending March 31, 1958	$ 204,500	
" " " 1959	109,221	
" " " 1960	773,681	
" " " 1961	1,367,729	
" " " 1962	1,380,118	
" " " 1963	951,729	
	$4,786,978	

STATEMENT IV (Cont'd)

Further amounts to be recovered based on expenditure to March 31, 1963		$ 165,747	
Amounts to be recovered from Dominion Government		$4,952,725	
Recovered from the City of Ottawa		1,800,000	
AMOUNTS TO BE RECOVERED FROM:			
The City of Ottawa	$1,976,237		
Dominion Government and the City of Ottawa — in process	1,039,264	3,015,501	
TOTAL RECOVERIES			$ 9,768,226
NET ESTIMATED COST TO MARCH 31, 1963			$ 9,768,227

STATEMENT V

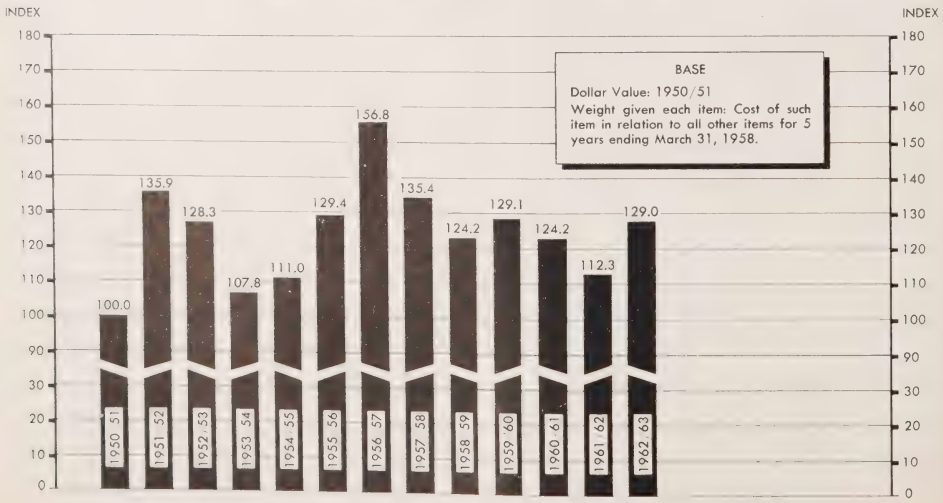
STATEMENT OF RECEIPTS

For the Fiscal Years Ending March 31, 1963 and March 31, 1962

	YEARS ENDING MARCH 31, 1963	MARCH 31, 1962
Sales of land and buildings	$1,399,092	$ 575,118
Property rentals	267,163	270,770
Sales of services and materials	375,627	426,907
Permits — sign and housemoving	56,236	48,268
Gas pump revenue	31,185	37,430
Gas line franchises	12,640	13,830
Burlington Bay Skyway	785,912	707,908
Miscellaneous	46,338	75,227
TOTAL RECEIPTS	$2,974,193	$2,155,458
Distribution:		
Ordinary revenue	$1,574,429	$1,541,703
Capital receipts	1,399,764	613,755
	$2,974,193	$2,155,458

CHART I

INDEX OF TENDER PRICES PAID ON ROAD CONTRACTS



STATEMENT VI

COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS

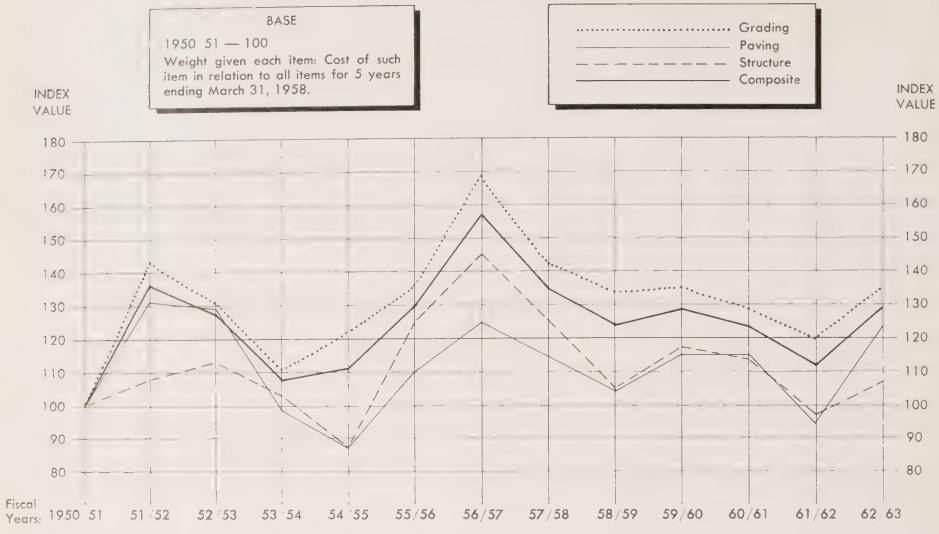
(Items used for price index purposes)

For period April 1, 1950 to March 31, 1963

Fiscal Year	Clearing Acre	Grubbing Acre	Earth Excavation, Cu. Yd.	Rock Excavation, Cu. Yd.	Granular "A", Ton	Granular "B", Ton	5/8" Crushed Gravel "A", Ton	5/8" Crushed Gravel "B", Ton	Bituminous Hot Mix Top Course, Ton	Bituminous Hot Mix Base Course, Ton	Sand Cushion, Ton	Earth Compaction, Cu. Yd.	Compaction Equipment, Hour	Water for Compaction, M. Gal.	Concrete in Culverts, Cu. Yd.	Concrete in Structures, Cu. Yd.	Structural Steel Fabrication, Ton	Structural Steel Erection, Ton
	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	.....	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	.....	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1 40	4.66	4.88	.79	.029	.....	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	.....	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	.....	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166 17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	.....	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	.....	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	.....	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.68	3.52	.71	.042	.....	4 56	26.79	31.98	237.93	59.50
1959/60	157.32	156.31	.41	2.00	1.44	.82	1.17	1.38	5.13	3.91	.79	.....	6.29	4.37	27.90	37.77	246.28	63.69
1960/61	157.89	161.49	.43	1.81	1.26	.71	1.55	1.37	4.68	4.11	.70	.....	6.49	3.81	26.33	32.66	277.75	75.32
1961/62	156.25	146.74	.36	1.76	1.29	.69	1.08	1.23	4.12	2.99	.69	.....	8.05	3.27	22.60	29.50	233.71	39.78
1962/63	194.30	153.68	.45	1.84	1.33	.83	1.22	1.35	5.04	4.01	.71	.....	9.28	3.31	27.58	31.34	267.18	58.48

CHART II

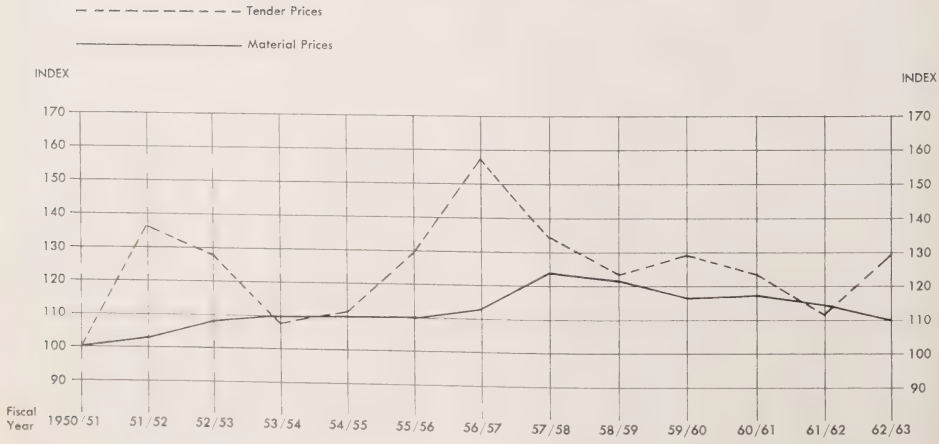
TENDER PRICE INDICES



Fiscal Years:	1950 51	51 52	52 53	53 54	54 55	55 56	56 57	57 58	58 59	59 60	60 61	61 62	62 63
Composite Index Values:	100.0	135.9	128.3	107.8	111.0	129.4	156.8	135.4	124.2	129.1	124.2	112.3	129.0

CHART III

COMPARISON OF TENDER AND MATERIAL PRICE INDICES



STATEMENT VII

BURLINGTON BAY SKYWAY

COMPARATIVE STATEMENT OF TOLL COLLECTION REVENUES AND EXPENDITURES

For the Years Ending March 31, 1963 and March 31, 1962

	Year Ending March 31, 1963	Year Ending March 31, 1962	Increase (Decrease)	Percentage Increase
Revenues:				
Toll Revenue Earned:				
Class I vehicles	$ 674,732	$ 620,871	$ 53,861	8.7%
Class II vehicles	44,117	36,879	7,238	19.6%
Class III vehicles	47,947	37,094	10,853	29.3%
Total Revenue Earned	$ 766,796	$ 694,844	$ 71,952	10.36%
Plus — Tickets sold but not presented	14,937	12,197	2,740	22.5%
	$ 781,733	$ 707,041	$ 74,692	
Add Premium U.S. Funds	4,179	867	3,312	
Total Revenue	$ 785,912	$ 707,908	$ 78,004	11.0%
Expenditures:				
Toll operating staff salaries	$ 132,453	$ 138,560		
Travelling expenses	2,644	1,200		
Office expenses and stationery	7,150	19,399		
Uniforms and raincoats	.....	917		
Light, heat, water, telephone, etc.	6,817	6,447		
Maintenance of building	3,330	2,172		
Maintenance of equipment	5,360	6,288		
Rental of equipment	24,165	31,016		
	$ 181,919	$ 205,999	(24,080)	(11.7%)
Excess of Revenues over Expenditures	$ 603,993	$ 501,909	$102,084	20.3%
Traffic:				
Class I vehicles	7,376,523	6,599,745	776,778	11.8%
Class II vehicles	195,241	163,137	32,104	19.7%
Class III vehicles	134,657	104,302	30,355	29.1%
Total	7,706,421	6,867,184	839,237	12.2%

	Cash	Tickets
Toll Rates		
Class I vehicles (passenger cars and trucks under one ton capacity)	15c.	5c.
Class II vehicles (passenger cars with trailers and trucks with two axles and more than one ton capacity)	25c.	16⅔c.
Class III vehicles (trucks with three axles or more and public vehicles)	45c.	30c.

OPERATIONS BRANCH

J. B. WILKES, P.Eng., *Manager of Operations*

CONSTRUCTION
H. A. Tregaskes, P.Eng.
Construction Engineer

Regional and District Engineers

MAINTENANCE
E. J. Orr, P.Eng.
Maintenance Engineer

CONSTRUCTION

H. A. TREGASKES, P.Eng.—Construction Engineer

During the year ending March 31st, 1963, construction continued at the busy pace of the past several years, and although in some areas of the province work was seriously delayed by persistently adverse weather conditions, by the year's end construction expenditures compared closely with those of the immediate past years.

Considerable emphasis was placed on several important projects which have been under way for some time, including the Trans-Provincial Highway 401, the Ottawa Queensway and the Trans-Canada Highway. In addition, a great deal of work was accomplished on Highway 403, the major highway development in the Hamilton-Burlington area, and on the important project on the Queen Elizabeth Way and Highway 405 near St. Catharines. The latter work includes the Garden City Skyway over the Welland Canal, the rebuilding of the Queen Elizabeth Way, both east and west of the Canal and the new dual highway connection from the Queen Elizabeth Way to the new international bridge at Queenston. This new work in the vicinity of St. Catharines-Queenston will be open to travel in the fall of 1963.

There was, in addition to the very large projects, the reconstruction of various main and secondary highways and the building of a large number of new structures throughout the province. New construction and reconstruction work was well distributed and all sections of the province received the benefit of new, improved highways and bridges.

Some of the more important work carried out in 1962–63 was as follows:

SOUTHWESTERN AREA—Chatham, London, Stratford and Owen Sound Districts

Work continued on Hwy. 401 in this portion of the Province. Between Tempo at Hwy. 4 and the Kent County Line, a distance of 33 miles, all grading was completed. Reinforced concrete pavement was placed in the westbound lane between Tempo and West Lorne, a distance of 24 miles. This section also includes three underpasses one of which was opened to traffic in November. Commencing at the eastern junction of the Tilbury By-pass and Highway 2, concrete paving of the north lanes was completed easterly to County Road 10, a distance of 13.67 miles. Four underpasses at major county roads were completed, and the interchange structure at the east junction of Tilbury By-pass was started. Reconstruction of Highway 76 from Woodgreen to Highway 401 was finished, with the placing of hot mix pavement in 1962, thus improving access from Highway 2.

Thirteen miles of hot mix resurfacing was placed on Highway 401 from the junction of Highway 2 at Eastwood, westerly. On Highway 4, in the Broughdale

area, 2.2 miles of undivided four-lane highway with a singing median were completed. Grading for the Highbury Avenue extension was nearly finished. This will provide the City of London with a second access to Highway 401.

Grading and approaches for two new service centres on Highway 401 were finished during the year.

Hot mix pavement was placed on Highway 59 from Highway 3 at Courtland to 7.5 miles south. The reconstruction work, including widening of pavement on Highway 3 east from St. Thomas, was over half completed by the end of the year.

The Jackson Park overhead on Ouellette Avenue, Windsor, spanning the Canadian Pacific and Essex Terminal Railways, was opened to traffic, providing a much improved entrance for Highway 3B into the main thoroughfare of Windsor.

Grading was completed on Highway 7 from the Village of Arkona southerly to the junction of Highway 22, a distance of 4.85 miles and from Grand Bend southerly to the junction of Highway 82, a distance of 9.14 miles. Two grading and paving contracts on Highway 3 were awarded late in the year from Blenheim westerly for a distance of 10.2 miles.

The Ausable River bridge and approaches were finished on Highway 4, 1.25 miles south of Hensall.

Grading, drainage, granular base, structures and paving were completed on Highway 21, Grand Bend to St. Joseph.

With the completion of grading, drainage and structure for the four-lane Freeport Diversion, Highway 8, a paving contract covering that new section of highway was awarded late in the year. Grading, drainage and granular base were completed on Highway 4, Clinton to Blyth, and this section was paved with a base course. Final paving will be carried out within the next few years.

Grading, drainage, granular base and hot mix paving with extensive curb, gutter and storm sewer work were carried out on Highway 23 in the Town of Palmerston, as well as on Highways 23 and 86 in the Town of Listowel.

Three structures and approaches on Highway 97 west of Galt were completed. Reconstruction work on Highway 9, Walkerton to Mildmay was started in 1962, and by the year's end, over 60 per cent of the work was finished.

A paving contract was let on Highway 6, from Orchard to Durham, on that reconstruction section of highway. Grading of Highway 21 from Elsinore to the junction of Highway 6 and Highway 21 was completed.

The grading and approaches for two new service centres on Highway 401 were finished in 1962.

CENTRAL AREA—Hamilton, Toronto, Port Hope Districts

Work continued on the Garden City Skyway with the completion of the structural steel and a good start was made on the concrete deck. By the year's end about 30 per cent of the deck was completed.

The St. David's Road interchange at the junction of the Queen Elizabeth Way and relocated Highway 8, and south service roads were completed.

Construction on neighbouring dual Highway 405 was continued on schedule, and a start made on the new Highway 406 in the City of St. Catharines.

Granular base and paving were completed on the northbound lane of the Queen Elizabeth Way from Fort Erie to Niagara Falls.

The Welland Avenue overpass crossing the Queen Elizabeth Way in St. Catharines was opened to traffic.

During the past year construction continued on Highway 403 from Freeman to the King and Main interchange in the City of Hamilton. A very large amount of work was performed on grading, structures, interchanges during the year.

Reconstruction of seven miles of road through the Six Nations' Indian Reserve was started under a joint project with the Dominion Government.

A one-mile section of Highway 99 was completed, improving the intersection with Brant County Road 32.

Work began on the widening of Highway 401 to a multi-lane collector road system through Metropolitan Toronto. Contracts were awarded for grading, paving and a new structure between a point west of Avenue Road and Hogg's Hollow, and the widening of the structure over the Canadian National railway line between Keele and Dufferin Streets.

The existing bridge over Hogg's Hollow was lengthened at the east end. Highway 7 was widened to four lanes through Woodbridge. This work included the construction of two structures, as well as grading and paving from Highway 400 to Highway 7. It was completed in the one construction year.

Reconstruction of Highway 10, including the major interchange at the Queen Elizabeth Way in the Cooksville area was finished to the main line of the Canadian National at Port Credit, and a subway under this railway, and widening southerly to Highway 2 were begun in the fall of 1962.

Highway 5 from Cooksville to Erindale was rebuilt and widened to four lanes. This included two new structures over the Credit River at Erindale.

A major dual highway access road to Malton International Airport from Highway 401, and widening of the Dixon Road to four lanes were started late in the year.

The elimination of level intersections on Highway 401 continued. Work completed included interchanges at Courtice and Waverley Roads, Underpass at Holt Road, and connecting service roads, permitting access to Highway 401. The location of this work lies between Oshawa and Bowmanville.

From the Town of Port Perry the reconstruction of Highway 7A continued easterly through Manvers Township. Four miles of grading were completed.

In the County of Prince Edward 7.5 miles of paving were carried out on Highway 14 northerly from the Village of Bloomfield.

On Highway 45 hot mix paving for 7.5 miles from Hastings to Norwood were finished, while on Highway 12 a reconstruction contract for 4.6 miles north and south of Sunderland was awarded.

A large structure on Highway 35 over the Trent Canal was started.

Grading and approaches for four new service centres on Highway 401 were completed in 1962.

EASTERN AREA—Kingston, Ottawa, Bancroft Districts

Concrete paving was carried out on the south lane of Highway 401 from Odessa west to 1.5 miles west of Napanee; and in the fall of 1962, 14 miles of new concrete pavement and 12 structures on Highway 401 were opened to traffic. Pre-stressed concrete beam structures were completed over Highway 401 at Wallbridge Road and Sydney Street, Belleville. Grading on the north lane and concrete paving on both north and south lanes were finished on 2.7 miles of Highway 401 west of Highway 16. An improved channelization was also completed on Highway 401 at the entrance to the Thousand Islands Bridge and at the Mallorytown Landing Park.

On Highway 2 a channelization was constructed at the Rocky Road intersection which improved the main entrance to a large industrial plant.

Bituminous hot mix paving was carried out on Highway 15 from Seeley's Bay to Morton.

Grading was commenced on Highway 42 from Smiths Falls to Port Elmsley. This work includes a large muskeg excavation and causeway over the Rideau Basin.

The grading on Highway 7 from Kaladar easterly from 8.56 miles was finished. and the first lift of hot mix paving was placed on this portion of the Trans-Canada Highway.

On Highway 502 from Napanee to Marysville, shoulder widening and resurfacing were done, correcting a narrow shoulder and slippery conditions.

Construction was carried out in 1962 on Stage III of the Ottawa Queensway with earth grading, structures and drainage work from Island Park Drive to Elgin Street, a distance of 3.5 miles. Eleven structures were under construction, six of which were finished during 1962. On Highway 17, Kennedy's Corners to Antrim, hot mix resurfacing was carried out over a distance of 16.7 miles; "HL. 8" binder course was completed.

On Highway 17, Meath to Pembroke, 9.4 miles, earth and granular grading, drainage and hot mix paving were carried out with extensive sub-excavation and storm sewer, curb and gutter work being done in the Town of Pembroke. This contract will be completed in June 1963.

In the early spring of 1962 minor trim work on the Manotick Diversion on Highway 16 was completed, and hot mix resurfacing of Old Highway 16 in the Manotick area was also finished.

The concrete paving on the eastbound lane from Toll Gate Road to one mile east of Lancaster on Highway 401, a distance of 14.4 miles was completed, and this section was opened as far as Lancaster in September 1962.

Concrete paving on both north and south lanes of Highway 401 from Aultsville to Ingleside, a distance of 3.0 miles was completed in 1962. Grading work continued west of Cornwall and commenced early in 1962 from Lancaster to the Quebec Boundary on Highway 401, but progress was seriously affected by persistently wet weather.

The grading and bituminous paving on Highway 62 from Bannockburn northerly 8.5 miles was completed, as was the paving of seven miles of Secondary Highway 512 from Cormac to Brudenell.

The Indian River bridge on Highway 41 in Pembroke was opened to traffic in February 1963.

NORTHERN AREA—Huntsville, North Bay, New Liskeard, Sudbury and Sault Ste. Marie Districts

Resurfacing of Highway 69B and connecting link through Parry Sound was carried out.

An additional seven miles of reconstruction on Highway 60 from Smoke Creek to Algonquin Park headquarters (Huntsville district boundary) was completed. Also on Highway 60 a new structure, over Oxtongue Lake Narrows, was finished and opened to traffic.

On Secondary Highway 518 near Kearney, a new structure was completed late in the year. Heavy reconstruction on Highway 35 and Highway 60 from Highway 11 east for 7.4 miles, and on Highway 118 from 5 miles west of Bracebridge westerly for 6.0 miles was started, and was well under way during the fall and winter of 1962-63.

Concrete base widening, grading, drainage and hot mix paving were carried out on Highway 17 from Echo Bay to Sault Ste. Marie, a distance of 12.26 miles.

Grading, culverts, granular base and hot mix base course paving were completed on Highway 17 from Havilland Bay to Chippewa Falls.

Hwys. 550 and 565 were reconstructed for a distance of 9.4 miles from Korah Road, Sault Ste. Marie, to Pointe aux Pins, and the entire section paved.

Grading, granular base and hot mix paving were completed on 2.6 miles of Secondary Highway 614 in the Townsite of Manitowadge. Grading work on Highway 101 east from Wawa was started late in the year.

Grading, drainage and granular base were carried out on Highway 101 from 9.4 miles west of the junction of Highways 101 and 129, westerly 12.72 miles to Big Pine Lake.

On the Forestry Road from Dalton north 7.0 miles, grading, gravelling and drainage were completed.

Grading for 2.8 miles on Highway 68 at Whitefish Falls, grading and paving on Highway 69 from Sudbury northerly to Val Caron, and a new structure over the Spanish River at Massey were completed. A large structure over the Spanish River at Webbwood was finished by the end of the year.

The structures at Verner on Highway 64 and Bissett Creek on Highway 17 were opened to traffic. Work on a nine-mile section of Highway 64 from Verner to Lavigne progressed well in 1962.

Three structures on Highway 11B were widened in preparation for the regrading and paving of this highway from the North Bay city limits to the junction of Highway 11.

Two contracts for grading and paving of Highway 11, from Sundridge to one mile south of Trout Creek, were completed. With the completion of this work an excellent highway is now available all the way from North Bay to Toronto.

The grading and granular base contract for the first six miles of the Tri-town By-pass, from the junction with the existing Highway 11 northerly to Secondary

Highway 558 was finished, while on the second grading contract north of Secondary Highway 558 work progressed well in 1962.

On Highway 11 the top course pavement was laid between Earlton and Englehart, while northerly from Englehart to the south junction with Highway 112, reconstruction work proceeded very well.

Grading, granular base and paving on Highway 11 from 12.5 miles north of Highway 66 to Wavell, and on Highway 66 work from Larder Lake easterly were finished, while grading work was begun from the Quebec boundary, westerly.

On Highway 65 east, the structure over Moose Creek was opened to travel, and on Highway 101 the substructure for the Ghost River bridge, located 30 miles east of Matheson, was finished and structural steel erected by late fall.

NORTHWESTERN AREA—Cochrane, Fort William, Kenora Districts

The grading and granular base contracts from Porquis Junction northerly for 9.3 miles on Highway 11 and Porquis Junction easterly to Ansonville on Highway 67 for six miles, including Development Road 607 at Ansonville were completed.

Paving was carried out on Highway 11 from 10 to 20 miles south of Cochrane, and resurfacing was performed for 10 miles south from Cochrane.

A structure contract was awarded for the new bridge over the Mattawishkwia River at Hearst, but by the year's end the deck and approach work were still to be done.

Work progressed to very near completion on the grading and paving of the access to the new international bridge at Pigeon River. Only some trimming work and approximately 1.4 miles of paving remain to be done.

Between Fort William and Kakabeka Falls, the first five miles of grading and paving were completed, and a start was made on the next six miles.

Work continued on the 22-mile section of Highway 17 from English River easterly. Approximately half this section was paved with one base course this year, and grading is well under way on the remainder. Work on a 14-mile contract west of Atikokan on Highway 11 proceeded very well.

With the completion of the high level bridge on the causeway across Rainy Lake, highway access is now provided to the east side of Rainy Lake.

East of Rainy Lake grading work on 22 miles of Highway 11 progressed satisfactorily. Work was nearly completed on a good-sized structure at Windy Point.

Paving was completed on an 11-mile section of the Trans-Canada Highway from the junction of Highway 17 from Longbow Corners to Vermilion Bay.

East and west of Dryden on Highway 17 heavy reconstruction covering about 20 miles progressed well, while from Longbow Corners westerly heavy rock grading for six miles was carried out.

The Thunder Creek bridge on Highway 17 east of Dryden was opened to traffic.

On Highway 105 grading proceeded on a 15-mile section north from Trout Lake.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1962-63

Hwy. No.	4-Lane Highways	Miles
3B	New Entrance to Windsor	1.5
401	Highway 16 at Johnstown to Prescott	2.7
7	Junction with Highway 400 to Highway 27	4.5
69	Sudbury Old City Limits, northerly	1.0
	TOTAL	9.7

Hwy. No.	2-Lane Highways	Miles
401	Odessa to west of Napanee (south lane)	13.9
401	Lancaster to Cornwall (south lane)	14.4
101	9 miles west of Highway 129, westerly	12.7
101	East of Chapleau	30.0
	TOTAL	71.0

SUMMARY OF NEW BRIDGES COMPLETED 1962-63

During the fiscal year 1962-63, the number of structures completed was	120

MAINTENANCE

E. J. Orr, P. Eng.—Maintenance Engineer

Inspection and Maintenance of Bridges

During 1962 approximately half of the structures on our highways and secondary highways were inspected. As a result, many structures were repaired or reinforced.

Major repairs were carried out on the lift bridge at Port Dover. This consisted of repairs to the supports of the lift span and a general overhaul of the mechanism.

Several structures were reinforced with Bailey bridge panels, such as the Joe River bridge on Secondary Highway 632 in the Huntsville District and the Running Creek bridge on Highway 40 in the Chatham District.

The Otter Creek bridge in the town of Norwich, on Highway 59, was reinforced by the addition of two heavy beams underneath the structure. Grays Creek bridge at Cornwall, on Highway 2, was reinforced with Bailey panels and additional stringers placed to strengthen the floor system.

On the Q.E.W. an amount of spalling and crazing was observed by taking drill cores on the deck of the Wickham Road bridge. The curbs and sidewalks were repaired, and then the asphalt was removed from the deck, one lane at a time. The poor concrete was stripped off the top surface of the deck and new concrete placed, using an epoxy resin bondacting agent. A waterproof membrane was placed on the deck prior to replacing the asphalt wearing surface.

In the town of Flesherton, the Beaver River structure on Highway 10 was considered to be in a weakened condition. This problem was solved by lining the structure with a multi-plate pipe arch and grouting the void between the old structure and the arch. The arch was also extended out on one side to give sufficient room to add a sidewalk.

Considerable work has been done during the last few years on the Belleville Bay bridges on Highway 14. The work was completed this year with the replacement of the old steel roller bearings with new steel and rubber elastomeric type bearings. One end of one span was also raised approximately one-and-a-half feet to level out the grade. Considerable settlement of this end of the structure had

occurred over the years. A study was also begun to determine the cost of overhauling the swing span mechanism.

Two structures on Highway 17, east of Sault Ste. Marie, were reinforced. These were the Garden River bridge and the Root River bridge. The steel beam approach spans were weakened as they were not designed for the heavy truck traffic which is now using this highway. There was also some settlement of the abutments. To reinforce the beams, steel H-piles were welded on the underside of the bottom flange. This increased the strength of the beams considerably and permitted the addition of more asphalt on the deck so as to smooth out the approaches.

The Bridge Maintenance Section was responsible for the design of many Bailey bridges for use in detours or as semi-permanent structures on secondary highways. The section was also responsible for the design of several permanent structures which were built on secondary highways by day labour forces. Examples of these structures are the Jessie River bridge on Secondary Highway 583 and the Cripple Creek bridge on Highway 101, west of Timmins.

The Department let 11 contracts for the repainting of 83 steel bridges throughout the province. Two contracts were not completed. Approximately 50 per cent of the structures were painted aluminum; the remaining 50 per cent were painted grey.

Department Asphalt Plant

The asphalt plant organization was concentrated in the Red Lake area during 1962.

The crusher and grading crews completed the grade preparation begun in 1961 for the paving operation. The asphalt plant operating from the Stone River pit, twelve miles south of Red Lake on Highway 105, produced 63,982 tons of mix. This tonnage represents 29.8 miles of paved highway comprised of Secondary Highway 618, Highway 125 and 12 miles of Highway 105, south from Red Lake.

Work was also begun under an Equipment Rental Contract on the next 15 miles of Highway 105, south from Stone River, in preparation for paving in 1963. The Department crusher produced 85,918 tons of granular "A" which was stockpiled in the pit, 17 miles south of Red Lake.

The department crusher from the Fort William District was moved to the Red Lake area to assist in crushing for the asphalt plant and also to produce crushed gravel in the Fort William and Cochrane districts. This crusher produced 28,500 tons of aggregate at Red Lake, and 41,289 tons of crushed gravel for Fort William and Cochrane districts, making a total of 69,789 tons produced during the season.

Mulch Pavement

Mulch pavement mixed and laid by department forces totalled 75.05 miles in the following districts:

Port Hope	3.62 miles
Bancroft	1.70 miles
Huntsville	15.70 miles
North Bay	25.20 miles
New Liskeard	27.80 miles
Fort William	1.13 miles

Zone Painting

Operating continuously throughout the summer, our 14 single and seven dual zone striping machines painted 10,607 miles of King's highways and secondary highways plus 193 miles of county roads.

Signs

During the year district forces erected or replaced 69,475 signs of various types and sizes ranging from fingerboards and "stop" signs to the large freeway and overhead metal signs.

Electrical

During the year April 1, 1962 to March 31, 1963, street lighting installations were completed at 58 locations totalling 1,110 street lights.

Traffic signals were installed, relocated or completely rebuilt at 53 locations. This includes three sets of interconnected signals as follows:

10 signals in one system at Windsor
6 signals in one system at Richmond Hill
3 signals in one system at Woodbridge

Flashing signals were installed in 49 locations.

49 large signs were illuminated.

36 small signs were illuminated.

Various weigh scale stations were equipped with illumination and "Driver Instruction Signals".

In addition to the foregoing, the district electrical crews wired a large number of small buildings and carried out maintenance work on these buildings as well as their regular work of maintaining traffic signals and highway lighting.

The details of highway lighting are as follows:

HIGHWAY LIGHTING

Installations put into Operation April 1, 1962–April 1, 1963

District 1 — Chatham	
1-3-26	Hwy. 3, Coopers Drain (4) 400-watt mercury vapour units (temporary)
1-2-2	Hwys. 401 and 2, Tilbury (west) (33) 4-lamp, 4′ fluorescent lamp units
1-7-21-22	Hwys. 7 and 21, Reece's Corners (13) 400-watt mercury vapour units
1-3B-9	Hwy. 3B (Ouellette Avenue) and Dougall Avenue, Windsor (4) 400-watt mercury vapour units (temporary)
1-401-2-20	Hwys. 401 and 2, east of Tilbury (1) 400-watt mercury vapour unit, relocated (temporary)
District 2 — London	
2-401-18	Hwys. 401 and 2, Eastwood (157) 400-watt mercury vapour units (4) 6′, 2-lamp fluorescent fixtures

2-81-39 Hwys. 2 and 81 to Delaware
(20) 400-watt mercury vapour units
(7) 4′, 2-lamp fluorescent fixtures

2-52-3 Hwy. 53, Eastwood
(2) 400-watt mercury vapour units

401-W-3 Hwy. 401, Service Area W-3, 89 miles west of Yonge Street on north side of Hwy. 401
(15) 400-watt mercury vapour units

401-W-4 Hwy. 401, Service Area W-4, 88 miles west of Yonge Street on south side of Hwy. 401
(15) 400-watt mercury vapour units

District 3 — Stratford

3-7-14 Hwys. 7 and 8 at Foundry Street, Baden
(2) 400-watt mercury vapour units

3-19-35 Hwy. 19, south, Thamesford
(14) fluorescent lamp units

District 4 — Hamilton

4-Q.E.W.-86 Hwy. Q.E.W. and Welland Avenue, St. Catharines
(8) 2-lamp, 100-watt fluorescent fixtures

4-Q.E.W.-140 Hwy. Q.E.W. and Gregory Road, St. Catharines
(2) 400-watt mercury vapour units

4-401-57 Hwys. 6 and 401, west of Preston
(2) 400-watt mercury vapour units

4-Q.E.W.-37 Hwy. Q.E.W. and Bowen Road, Fort Erie
(4) 400-watt mercury vapour units (relocated)

401-W-2 Hwy. 401 Service Area W-2, 49 miles west of Yonge Street, on south side of Hwy. 401
(15) 400-watt mercury vapour units

401-W-1 Hwy. 401, Service Area W-1, 49 miles west of Yonge Street, on north side of Hwy. 401
(15) 400-watt mercury vapour units

District 5 — Owen Sound

Nil

District 6 — Toronto

6-5-75 Hwy. 5 at Mississauga Road
(28) 400-watt mercury vapour units

6-5-51 Hwy. 5 at Dixie Road
(2) 400-watt mercury vapour units

6-7-60 Hwy. 7 at Bathurst Street
(3) 400-watt mercury vapour units

6-7-400-100 Hwy. 7 at Hwy. 400
(102) 400-watt mercury vapour units

6-7-99 Hwy. 7 and 8th Avenue., Woodbridge
(20) 400-watt mercury vapour units
Hwy. 7 and Weston Road, Woodbridge
(31) 400-watt mercury vapour units
Hwy. 7 and Bruce Street, Woodbridge
(14) 400-watt mercury vapour units

6-7-27-101 Hwys. 7 and 27
(15) 400-watt mercury vapour units

6-27-76 Hwy. 27 at Schomburg
(9) 400-watt mercury vapour units

6-27-121 Hwy. 27 at Belfield Road
(3) 400-watt mercury vapour units

6-11-102 Hwy. 11 at Davis Drive
(23) 400-watt mercury vapour units

6-48-83 Hwy. 48 and Sheppard Avenue
(22) 400-watt mercury vapour units

6-50-159 Hwy. 50 at Bolton
(3) 400-watt mercury vapour units (temporary)

6-401-92 Hwy. 401 at Woodbine Avenue
(2) 400-watt mercury vapour units

6-401-50 Hwy. 401 and Yonge Street
(60) 400-watt mercury vapour units

6-401-54 Hwy. 401 east of Hwy. 27 (high mounting installation)
(12) 400-watt mercury vapour units

6-400-113 Hwy. 400 at Dunlop Street
(17) 400-watt mercury vapour units

6-400-41 Hwy. 400 at Bayfield Street
(16) 400-watt mercury vapour units

6-400-115 Hwy. 400 at Essa Road
(18) 400-watt mercury vapour units

6-Q.E.W.-73 Hwys. Q.E.W. and 10
(204) 400-watt mercury vapour units

District 7 Port Hope

401-E-1 Hwy. 401, Service Area E-1, 46 miles east of Yonge Street, Toronto, on Hwy. 401, north side
(15) 400-watt mercury vapour units

401-E-2 Hwy. 401, Service Area E-2, 52 miles east of Yonge Street, on Hwy. 401, south side
(15) 400-watt mercury vapour units

401-E-3 Hwy. 401, Service Area E-3, 93 miles east of Yonge Street, on Hwy. 401, north side
(15) mercury vapour units

401-E-4 Hwy. 401, Service Area E-4, 93 miles east of Yonge Street, on Hwy. 401, south side
(13) 400-watt mercury vapour units

District 8 — Kingston

8-401-502-39 Hwys. 502 and 401
(5) 400-watt mercury vapour units

8-7-41-14 Hwys. 7 and 41, Kaladar
(4) 400-watt mercury vapour units

District 9 - Ottawa

9-7-7B-33 Hwys. 7 and 7B, Carleton Place
(14) 400-watt mercury vapour units

District 10 — Bancroft

Nil

District 11 — Huntsville

11-69-29 Hwy. 69 at Parry Sound, north entrance
(12) 400-watt mercury vapour units

11-69-28 Hwy. 69 at Parry Sound, south entrance
(14) 400-watt mercury vapour units

District 13 — North Bay

Nil

District 14 — New Liskeard

14-11-112-8 Hwys. 11 and 112, South Wye
(19) 400-watt mercury vapour units

14-66-112-7 Hwys. 66 and 112, North Wye
(9) 400-watt mercury vapour units

14-11-66-4 Hwys. 11 and 66, Kenogami
(12) 400-watt mercury vapour units

14-11-101-5 Hwys. 11 and 101, Jct. Matheson
(21) 400-watt mercury vapour units

14-11-67-1 Hwys. 11 and 67, South Porquis Junction
(17) 400-watt mercury vapour units

14-101-2 Hwy. 101 and Bruce Street, South Porcupine
(16) 400-watt mercury vapour units

14-11-571-6 Hwys. 11 and 571, North Earlton
(8) 400-watt mercury vapour units

District 16 — Cochrane

Nil

District 17 — Sudbury

17-17-12 Hwy. 17 and Barrydowne Road
(17) 400-watt mercury vapour units

17-17-10 Jct. Hwy. 17 and Sec. Hwy. 541 (Falconbridge Road)
(20) 400-watt mercury vapour units

17-69-543-14 Jct. Hwy. 69 and Sec. Hwy. 543
(2) 400-watt mercury vapour units

District 18 — Sault Ste. Marie

18-17-546-2 Hwy. 17 and Sec. Hwy. 546, village of Iron Bridge
(21) mercury vapour units (link agreement)

District 19 — Fort William

Nil

District 20 — Kenora

Nil

TRAFFIC SIGNALS

Installations put into Operation April 1, 1962–April 2, 1963

District 1 — Chatham	
1-3-36	Hwy. 3 and Coopers Drain, fixed time (temporary)
1-3-37	Hwy. 3 and Malden Road, traffic actuated
1-3B-9	Hwy. 3B (Ouellette Avenue) at Eugenie Avenue, fixed time (temporary)
1-18-39	Hwy. 18 at Kingsville, traffic actuated
1-39-22	Hwy. 39 (Tecumseh Road) at Jefferson Boulevard, Windsor, interconnected system
1-39-24	Hwy. 39 (Tecumseh Road) at St. Louis Avenue, Windsor, interconnected system
1-39-25	Hwy. 39 (Tecumseh Road) at Ford Avenue, Windsor, interconnected system
1-39-28	Hwy. 39 (Tecumseh Road) at Westminster Boulevard, Windsor, interconnected system
1-39-29	Hwy. 39 (Tecumseh Road) at Pillett Road, Windsor, interconnected system
1-39-30	Hwy. 39 (Tecumseh Road) at Bernard Road, Windsor, interconnected system
1-39-31	Hwy. 39 (Tecumseh Road) at George Street, Windsor, interconnected system
1-39-32	Hwy. 39 (Tecumseh Road) at Central Avenue, Windsor, interconnected system
1-39-33	Hwy. 39 (Tecumseh Road) at Meldrum Road, Windsor, interconnected system
1-39-35	Hwy. 39 (Tecumseh Road) at Drouillard Road, Windsor, interconnected system
District 2 — London	
2-2-4-13	Hwys. 2 and 4, Lambeth, fixed time
District 4 — Hamilton	
4-3-17	Hwy. 3 and Ridge Road, Ridgeway (renovated)
4-Q.E.W.-5	Hwy. Q.E.W. and Ontario Street, St. Catharines (installed detectors)
4-Q.E.W.-10	Hwy. Q.E.W. and Sodom Road, installed detectors
4-8-15	Hwys. 8 and 20, Stoney Creek, rebuilt after being moved for detour
4-20-31	Hwy. 20 and Barton Street E., Hamilton, rebuilt after being moved for detour
4-20-27	Hwy. 20 and King Street, Stoney Creek, rebuilt after being moved for detour
4-6-51	Hwys. 6 and 54, Caledonia, renovated to underground system
4-3-23	Hwys. 24 and 3, Simcoe, rebuilt system
4-Q.E.W.-40	Hwy. Q.E.W. and Homer, removed all lane control signals for construction and re-installed
District 6 - Toronto	
6-2-10-114	Hwys. 2 and 10 (Port Credit), fixed time
6-2-10-110	Hwy. 2 and Rosewood Avenue (Hwy. 10 detour), temporary

6-5-27 Hwy. 5 and Mississauga Road (Erindale), fully actuated
6-5-79 Hwy. 5 and Municipal Drive and Paximan Road, fully actuated
6-7-111 Hwy. 7 and Dufferin Street, Concord, fully actuated
6-7-99 Hwy. 7 and Kennedy Road, Unionville, fully actuated
6-7-87 Hwy. 7 and Bathurst Street, 3-phase, fully actuated
6-7-18 Hwys. 7 and 27, Woodbridge, fully actuated
6-7-102 Hwy. 7 and Bruce Street, Woodbridge, interconnected system
6-7-101 Hwy. 7 and Weston Road, Woodbridge, interconnected system
6-7-100 Hwy. 7 and 8th Avenue, Woodbridge, interconnected system
6-10-96 Hwy. 10 and Nanwood Drive, fully actuated
6-11-54 Hwy. 11 and Markham Road, interconnected system
6-11-109 Hwy. 11 at Centre Street, Richmond Hill, interconnected system
6-11-108 Hwy. 11 at Crosby Avenue, Richmond Hill, interconnected system
6-11-107 Hwy. 11 at Levendale Road, Richmond Hill, interconnected system
6-11-106 Hwy. 11 at Industrial Road, Richmond Hill, interconnected system
6-10-113 Hwy. 10 at Burnhamthorpe Road, fully actuated
6-11-105 Hwy. 11 at Elgin Mills Sideroad (Richmond Hill) interconnected system
6-27-117 Hwy. 27 and Belfield Road, fully actuated (three phase)
6-48-82 Hwy. 48 and Sheppard Avenue, fully actuated
6-Fallstaff-116 Fallstaff Road, Dept. of Transport, Downsview, fixed time
6-11-97 Hwy. 11 and Davis Drive, fully actuated

District 7 — Port Hope
7-14-1 Hwy. 14, Belleville Bay bridge, raised signals for construction of bridge

District 8 — Kingston
8-2-2 Hwy. 2 and R.C.A.F. main entrance, Trenton, rebuilt system

District 9 — Ottawa
9-17-6 Hwy. 17 (Queensway) and Blair Road, Ottawa, fully actuated, three phase

District 13 — North Bay
13-11-17-5 Hwys. 11 and 17 at O'Brien Street, traffic actuated

District 14 — New Liskeard
14-11-1 Hwy. 11, south of Englehart, (temporary) removed

District 17 — Sudbury
17-69-543-11 Hwy. 69 and Sec. Hwy. 543, fully traffic actuated

District 18 — Sault Ste. Marie
Nil

FLASHER BEACON
Installations put into Operation April 1, 1962–April 2, 1963

District 1 — Chatham
1-3B-21 Hwy. 3B at Ouellette Avenue, Windsor
(1) amber flasher on guy cable

1-3B-39-22	Hwys. 3B (Ouellette Avenue) and 39 (Tecumseh Boulevard), Windsor (1) amber flasher on Keep Right sign
1-3B-23	Hwy. 3B (Ouellette Avenue) at Dougall Avenue, Windsor (1) amber flasher on yield sign

District 2 - London

2-81-32	Hwy. 81 and Greenway Corners (1) amber flasher on pedestal
2-126-33	Hwy. 126 (Highbury Avenue) and Commissioners Road (2) amber flashers on detour sign
2-2-35	Hwy. 2 at Horner's Creek (2) amber flashers (temporary)
2-3-36	Hwy. 3 at Catfish Creek (2) amber flashers (temporary)
2-4-37	Hwy. 4 at 1.9 miles north of Hwy. 22 (2) amber flashers (temporary)
2-4-38	Hwy. 4 at 4 miles south of Hwy. 7 (2) amber flashers (temporary)

District 3 Stratford

3-86-87-21	Hwy. 86-87, Bluevale (1) red flasher on stop sign

District 4 Hamilton

4-3A-57-62	Hwys. 3A and 57, Beckett's Bridge (1) red flasher head on stop sign
4-3-32	Hwys. 3 and 3A, Chambers Corners (2) flasher heads on stop sign
4-Q.E.W.-66	Hwy. Q.E.W. at Stoney Creek Traffic Circle (4) flasher heads on checkerboards
4-52-69	Hwy. 52 and County Road 39, north of Copetown (2) flasher heads, red, on stop sign
4-52-99-68	Hwys. 52 and 99, south of Copetown (1) flasher head, amber, on stop sign ahead

District 5 Owen Sound

5-26-19	Hwy. 26 at Wilsons Corners on Brocks Beach (1) flasher head

District 6 - Toronto

6-5-74	Hwy. 5 and Erindale, east of intersection amber on pedestal
6-5-75	Hwy. 5 and Erindale, west of intersection (1) amber on pedestal
6-7-60	Hwy. 7 and R.R. bridge, west of Keele, west end of bridge (1) amber on pedestal
6-7-66	Hwy. 7 and R.R. bridge, west of Keele, east end of bridge (1) amber on pedestal
6-10-76	Hwy. 10, north of Q.E.W. (1) amber on pedestal

6-Q.E.W.-78 Hwy. Q.E.W. eastbound, exit to south service road, east of Hwy. 10, west end on service road
(1) amber flasher on pedestal

6-Q.E.W.-79 Hwy. Q.E.W. eastbound, exit to south service road, east of Hwy. 10, east end on service road
(1) amber flasher on pedestal

District 8 — Kingston

8-37-24 Hwy. 37, Plainfield
(1) amber flasher on pedestal

8-401-502-25 Hwys. 401 and 502
(4) amber flashers on tripods

8-2-2 Hwy. 2, Blessington Creek
(1) amber flasher replacement on pedestal

District 9 — Ottawa

9-16-43-16 Hwys. 16 and 43, Kemptville
(1) red flasher on pedestal

9-17-20 Hwy. 17, west end of Queensway
(2) amber flashers on highway ends sign

9-17-17 Hwy. 17, east end of Queensway
(2) amber flashers on pavement narrows sign

9-401-16-13 Hwy. 401 and 16, Johnstown area
(1) amber flasher on pedestal

9-17-17 Hwy. 17, Greens Creek area
(1) amber flasher on pedestal, replaced

District 17 — Sudbury

17-17-7 Hwy. 17 and Barrydown Road
(1) amber flasher on keep right sign

17-17-541-4 Hwy. 17 and Sec. Hwy. 541
(1) amber flasher on Keep Right sign

District 18 — Sault Ste. Marie

18-17-130-1 Hwys. 17 and 130
(1) red flasher on stop sign, moved after construction

SIGN LIGHTING

Installations put into Operation April 1, 1962–April 2, 1963

District 2 — London

2-401-2-3 Hwys. 2 and 401, Eastwood
(2) 6′ fluorescent fixtures
(1) 8′ fluorescent fixture

District 4 — Hamilton

4-Q.E.W.-2-13 Hwy. Q.E.W. and Hwy. 2
(2) 8′ fluorescent fixtures

DISTRICT 6 - - TORONTO

6-5-43 Hwy. 5, west of Cooksville
(8) 100-watt red lens incandescent fixtures on detour sign
(8) 150-watt sign, light base incandescent fixtures on detour sign

6-7-44 Hwy. 7 and Bathurst Street
(2) 150-watt incandescent fixtures on pedestal

6-27-45 Hwy. 27 and Burnhamthorpe
(1) 8′ fluorescent fixture

6-27-46 Hwy. 27, north of Albion Road
(4) 100-watt red lens incandescent fixtures on detour sign
(4) 150-watt sign light, incandescent fixtures on detour sign

6-50-47 Hwy. 50, south of Bolton
(4) 100-watt red lens incandescent fixtures on detour signs
(4) 150-watt sign light, incandescent fixtures on detour signs

6-400-401-36 Hwys. 400 and 401 on bridge, west end
(2) 6′ fluorescent fixtures
(1) internally fluorescent fixture

6-400-48 Hwy. 400, north bound exit to Essa Road
(2) 8′ fluorescent fixtures

6-400-41 Hwy. 400, north bound exit on ramp to Barrie
(3) 8′ fluorescent fixtures

6-400-39 Hwy. 400, north bound exit to Hwy. 26 west and town of Barrie
(2) 8′ fluorescent fixtures

6-400-40 Hwy. 400, south bound exit to Hwy 26 west and town of Barrie
(2) 8′ fluorescent fixtures

6-Q.E.W.-50 Exit of Q.E.W. west to Hwy. 27 north
(2) 8′ fluorescent fixtures

6-Q.E.W.-52 Q.E.W. west 1,000 ft. east of Dixie slip off
(1) 8′ fluorescent fixture
(2) 6′ fluorescent fixtures

6-Q.E.W.-53 Q.E.W. west exit to Dixie Road and north service road
(2) 8′ fluorescent fixtures

6-Q.E.W.-31 Q.E.W. west exit to Hwy. 10 north and south
(2) 8′ fluorescent fixtures

6-Q.E.W.-29 Q.E.W. east exit to Hwy. 10 north and south
(2) 8′ fluorescent fixtures

6-Q.E.W.-54 Q.E.W. south service road east bound, east of Hwy. 10
(1) 150-watt incandescent fixture

6-Q.E.W.-30 Q.E.W. east, west of Cawthra Road
(2) 6′ fluorescent fixtures
(1) 8′ fluorescent fixture

6-Q.E.W.-55 Q.E.W. east on Cawthra bridge overpass
(2) 8′ fluorescent fixtures

6-Q.E.W.-56 Q.E.W. east, south service road, east
(1) 150-watt incandescent fixture

6-Q.E.W.-57 Hwy. Q.E.W. east, 260′ east of Etobicoke Creek, single arm overhead
(2) 8′ fluorescent fixtures

6-Q.E.W.-58 Hwy. Q.E.W. east, 960′ east of Etobicoke Creek, single arm overhead
(2) 8′ fluorescent fixtures

6-Q.E.W.-59 Hwy. Q.E.W. east, exit to Hwy. 27 south
(2) 8′ fluorescent fixtures
6-Q.E.W.-37 Hwy. Q.E.W. east, west of Hwy. 27
(2) 6′ fluorescent fixtures
(1) 8′ fluorescent fixture
6-Q.E.W.-61 Hwy. Q.E.W. east exit to Hwy. 2, east of the Humber
(2) 8′ fluorescent fixtures

District 14 — New Liskeard
14-11-112-4 Hwys. 11 and 112, South Wye
(2) 8′ fluorescent fixtures
14-11-101-5 Hwys. 11 and 102, West Jct. Matheson
(2) 8′ fluorescent fixtures

Forestry

Fourteen districts carried out tree planting during the fiscal year, accounting for 77,882 trees and shrubs. Included in the planting was landscaping of various district headquarter sites and erosion control projects.

The saving of large trees made possible by the use of the "Tree Saver" machine continued in six districts in the southern part of the province. A record number of 1,536 trees were relocated prior to regrading sections of old highway. The survival rate on the tree moving projects continues to be good.

Some 23,638,560 square yards of grass seeding was completed, employing for the most part the hydraulic seeder — mulch blower method. The research on grass seeding methods continued, dealing particularly with (a) wood pulp fibre mulch and (b) jute matting for the establishment of grassed waterways.

There was an increase in weed spraying operations over the previous year. Mileage covered throughout the province totalled 8,193 and included extensive brush control work in the northern districts. Under the close supervision of the district arborists, soil sterilant work for control of growth under guide rail continued with increasing effectiveness.

In the southern districts the forestry crews removed 7,803 dead or dangerous trees in a continuing program to safeguard the travelling public.

Weigh Scales

Five new weigh scales were installed in 1962 at the following locations:

District 8 — Hwy. 401, 1¼ miles east of Prescott
30-ton, 12′ x 10′ axle load.
District 16 — Hwy. 11 at Smooth Rock Falls
30-ton, 12′ x 10′ axle load.
District 16 — Hwy. 11, 3 miles west of Kapuskasing
30-ton, 12′ x 10′ axle load.
District 16 — Hwy. 11, 2 miles east of Longlac
30-ton, 12′ x 10′ axle load.
District 20 — Hwy. 17 at Vermilion Bay
30-ton, 40′ x 10′ platform scale replaced by 30-ton, 12′ x 10′ platform scale replaced by 30-ton, 12′ x 10′ axle load.

Pavement Maintenance

The two operations employed in our pavement maintenance program which proved so successful in 1961 were continued with equal success this year.

Our "Pavement De-Slicker" was kept in operation throughout the summer. The extent of flushed and slippery pavement was such that the new burner, constructed during the summer in 1961 in our Downsview shop, successfully completed the program, approximately 30 miles.

The Dix-Seal treatment of pavement surfaces was continued into its third year on many sections of highway in 1962.

Three other similar mixes were tried out on several sections of highway. These products met with varied success and are still being evaluated.

A new product was used with promising results in our cold mix patching program in several districts. This mix is composed of an emulsified asphalt and graded aggregate, prepared hot, and may be used as a hot mix direct from the plant or stockpiled for winter and spring application as a cold mix.

Winter Maintenance

The winter of 1962–63, considering the province as a whole, was more severe than usual with much below average temperatures prevailing, particularly during the latter half of the season. Heavy snow falls were experienced in the snow belt areas and winter weather extended late into the spring.

The winter works program, although curtailed somewhat by the extreme cold weather, enabled the districts to carry out successfully projects such as clearing, grubbing, grading, rock excavation, granular base, fencing, bridge repair and reconstruction.

In the absence of the joint Provincial and Dominion Government Program for the development of picnic sites, the districts carried out a program which resulted in 75 sites being improved or developed.

TABLE SHOWING TOTALS OF WORK DONE 1962-63

Class of Work	Number	Tons	Miles
Automatic signals at railway crossings	42		
Bituminous hot mix pavement		1,173,571.53	355.52
Bituminous mulch and cold mix		118,693.00	732.50
Bituminous prime on gravel roads (gals.)	1,646,909	54,190.10 (sand)	649.46
Bituminous resurfacing old pavement		305,408.22	446.60
Bituminous surface treatment (gals.)	754,614	32,638.50 (chips)	310.10
Bridges built	120		
Bridges painted	78		
Calcium dust layer — gravel roads		9,907.55	1,051.86
Calcium for de-icing roads		38.15	
Concrete base pavement, asphalt top		49,917.50	8.08
Concrete pavement (sq. yds.)	971,607		77.39
Crushed gravel and stone (by contract)		5,009,560.95	1,291.65
Crushed gravel and stone (by Dept. forces)		579,437.62	6,113.22
Grading and culverts			430.05
Granular base on new grading		13,643,443.15	504.25
Granular base on old grading		1,092,947.66	933.85
New buildings erected this year	54		
Off-road parks maintained	196		

Class of Work	Number	Tons	Miles
Roads snowplowed and kept open (King's Hwys.)			10,458.17
Roads snowplowed and kept open (Sec. Hwys.)			2,880.61
Roadside picnic places maintained	791		
Routine maintenance (King's Hwys.)			10,458.17
Routine maintenance (Sec. Hwys.)			2,799.41
Salt for de-icing roads (raw)		138,545.72	1,574.00
Salt in sand, stockpiled		60,942.29	
Sand for winter maintenance		977,490.01	
Scale houses maintained	41		
Seeding by Department forces (acres)	4,826.31		
Shrubs received and planted	56,398		
Signs newly erected or replaced	68,679		
Snow hedges planted this year			4,537.60
Snow fence erected, dismantled, stored			1,122.14
Traffic lights installed this year	45		
Weed control (gals.)	4,173		6,696.08
Zone painting (King's Hwys.) (gals.)	130,923		9,673.33
Zone painting (Sec. Hwys.) (gals.)	8,373		550.30
Development roads built			78.66

CONTRACT WORK FOR 1962-63

T. C. MUIR, P.Eng.—Contract Control Engineer

The number of contracts of all types awarded this year again indicated an increase over the previous year. This year 421 contracts were awarded, a 14.7 per cent increase over the 367 of the previous year. Whereas there was a monetary reduction in the amount of contract award last year, this year saw a 10.7 per cent increase in the total monetary value of the contracts awarded.

The department, after its adoption, in 1957, of qualification procedures in its contracts, has expanded the use of qualifications so that now 95 per cent, by dollar volume, of all the contracts awarded this year was qualified. The qualification procedure was further implemented this year by the department's application of penalties for low quality work and poor performance, to the extent that 69 warning letters were sent to delinquent contractors advising them of the shortcomings, and 32 reductions were made in the contractors' rating.

The application of liquidated damages in the department's contracts was further expanded this year so that approximately 90 per cent of the department contracts contained the liquidated damages clause. By the application of the liquidated damages and the installation of such clause in the contracts, the number of contracts being completed on time has greatly increased and as a result, aided in the establishment of a firmer program and schedule.

Where certain works are of extreme urgency and time would not permit full-scale pre-engineering, design and tendering, the department introduced what is known as invitation bids. This year 66 such contracts were called with very effective results.

In the accelerated programs for Roads-to-Resources and Forestry Roads, time did not always permit the preparation of contracts by unit price basis, and the department had to implement what is known as equipment rental contracts, wherein the department requests bids on equipment and labour to carry out its capital construction work. This type of contract was used in eight instances. Having gained experience in the past two years with this type of contract, the results were most gratifying.

The following is a summary of contract work awarded for 1962-63.

Type of Work	Total
MAINTENANCE	
Prime dust layer	8
Crushed gravel (including 32 capital contracts)	93
Hot mix patching	19
Resurfacing	8
Surface treatment	10
Winter sanding	18
Screened sand	14
Bridge painting	11
Calcium chloride apply	4
TOTAL	185
CONSTRUCTION	
Concrete paving	13
Grading and culverts } 57 structures included	45
Grading and hot mix paving } 57 structures included	47
Hot mix paving	18
Structures	30
Structural steel	31
Miscellaneous	52
TOTAL	236
GRAND TOTAL — MAINTENANCE, CONSTRUCTION	421

MATERIALS AND RESEARCH DIVISION

A. RUTKA, P.Eng., *Materials and Research Engineer*

The Materials and Research Division provides a technical service to other engineering sections concerned with the design, construction and maintenance of highways, by testing materials, recommending pavement and foundation designs, exercising quality control, preparing specifications, developing new methods of testing and construction techniques, assessing problems and preparing engineering appraisals and reports. The pre-engineering and quality control functions are carried out by the five regional offices. The Materials and Research personnel assist in giving lectures and instructions on courses established by the training committee, to construction and municipal engineering staff, in order to improve inspection and to generally upgrade the quality of the work.

Research activities have increased over the past year to keep pace with the technological developments and with the problems that are occurring because of increased traffic, the decreasing supply of good quality construction materials, and the increasing deterioration of pavements and structures. Technical reports were prepared on all completed research projects and distributed widely within the department. The following reports were prepared during the past fiscal year:

1. Epoxy Resins for Concrete Construction and Restoration.
2. Observations on Protective Surface Coatings for Exposed or Asphaltic Surface Concrete.
3. An Evaluation of Joint Fillers.
4. Frost Design Practice in Canada.
5. Nuclear Methods for Determining Density and Moisture Content.
6. A Study of the Skid Resistance of Pavement Surfaces.
7. Uniformity of Application of Bituminous Binders in Surface Treatment Work.
8. Some Case Records of Embankment Failure.

Five papers were prepared and presented by the division at technical conferences in Canada and the United States.

The division is comprised of several sections, each of which carry out work of a specialized nature. The head office section personnel provide technical guidance and direction to the regional staff.

Materials Section

W. R. Bennett, P.Eng., Principal Materials Engineer

This section locates and appraises potential granular deposits and quarry sites for construction contracts; evaluates and controls material from commercially operated deposits; provides a quality control service on construction and maintenance contracts involving concrete or bituminous materials, and gives technical advice during the course of the work.

The pre-engineering granular location work was concentrated on major projects, such as Highway 401, Tilbury to London and Cornwall to the Quebec

Boundary; Highway 11, Atikokan to Rainy Lake, and by-pass projects in urban areas. The staffing of each region with a geologist has permitted a more rapid appraisal of construction materials, thus providing a quicker service for design and construction purposes. Assistance was given to several commercial aggregate producers in plant set-up, material selection and processing techniques, and good quality aggregates were obtained by the department.

Some interesting and challenging concrete and asphalt problems were undertaken to improve the performance of pavements and structures. These are briefly summarized as follows:

1. A special mechanical bridge deck finishing machine was introduced at the Garden City Skyway, in an attempt to obtain smooth bridge decks, thus eliminating the need for bituminous surfacing.
2. The development and use of "hi-lo" indicators to detect variations in the finished concrete pavement surfaces.
3. Extensive laboratory development work in conjunction with field trials was completed in evaluating joint sealing compounds and techniques for construction, plus expansion joints in bridge decks and slabs.
4. Several deteriorated concrete bridge decks, piers, curbs, gutters and sidewalks were restored by the epoxy resin bonding techniques.
5. A study of prolonged mixing time of ready-mix concrete and the effects of this mixing on the immediate and ultimate properties of the concrete.
6. The general improvement in quality control techniques particularly where ready-mix concrete has been used in exposed locations, has resulted in better workmanship and improved durability.
7. Two trial sections of coloured pavement were laid on Highway 401 near Highway 10. The coloured pavement seems to have some promise in special applications and will be tried in other areas under different conditions, in the future.
8. Laboratory development work and field trial applications were made on several different sand-asphalt mixes, using a variety of bituminous binders. These mixes are intended as thin overlays and seem to hold much promise for highway maintenance purposes.
9. Air-cooled iron blast-furnace slag aggregate was tried in hot mix for the first time on a highway project on the Airport Road west of Sault Ste. Marie.

Soils Section

G. Wrong, P.Eng., Principal Soils Engineer

This section schedules and co-ordinates soils investigation work in accordance with the department's construction program, supplies information on surface geology through air photo interpretation, conducts geophysical investigations and renders technical advice on soils problems.

During the year, 140 soils design resports were received from the regions, reviewed and submitted to the road design office.

Air photo interpretations consisting of terrain typing, and the location of

granular and borrow areas, were undertaken on several projects, totalling approximately 3,800 square miles.

Geophysical investigations by the seismic method, were increased and carried out in areas inaccessible to power equipment, to obtain the depths of overburden and the characteristics of the overburden.

Regional staff undertook the review of selected pavements and recommended priorities for reconstruction purposes based on performance. Benkleman Beams were supplied to each region and deflection measurements were taken throughout all of the seasons to complete the inventory on pavement evaluation studies.

Foundation Section

A. Stermac, P.Eng., Principal Foundation Engineer

Investigations were undertaken on all bridge sites and high embankments, to determine the bearing capacity of the soil and to arrive at the most economical foundation designs. Several difficult sites were instrumented for design and construction control purposes. The investigations undertaken were as follows:

Structures: King's Highways	56
Structures: Municipalities	9
Stability Investigations	23
Field Instrumentations	14
Patrol Garages	29
	131

Seventy-four foundation reports, prepared by various private consulting firms for municipalities, were also reviewed. As all of the work could not be handled with the small foundation staff, a number of projects were assigned to consulting firms. These were as follows:

Bridge Sites	47
Patrol Garages	2
Field Instrumentations	2
	51

Some laboratory and field investigations were undertaken on strength regain of disturbed clays, pore pressure resulting from pile driving, mobilization of skin friction on piles and on varved clays, in order to obtain a better understanding of the soil properties for design information.

Office Engineer's Section

D. A. MacDonald, P.Eng., Office Engineer

A complete granular inventory of all known granular deposits and quarries (present total of 12,000), located within the province, is maintained in this office. Such information as quantity, quality, pit conditions and the history of these deposits, are available for most of the sources. Some 112 strip maps were prepared, indicating the suitability of granular deposits for contract purposes. A total of 7,000 soils and granular samples were decisioned, evaluated, recorded, typed and distributed. Preliminary granular investigations and quantity checks were prepared for field investigations and review, for 71 projects.

The department, for the first time, supplied granular material on three contracts. These granular sources were optioned and provided free of charge to the successful contractor. All compaction results on soils and granular materials throughout the province were tabulated, evaluated and discussed at the district construction engineers' conference.

Chemical Section

A. C. Suter, P.Eng., Principal Chemical Engineer

The Chemical Section carries out chemical testing of materials purchased by the department, as well as evaluating the potential uses of new materials.

Over the year more than 1,700 samples on 100 different types of materials were tested. Many field problems with these materials were also investigated. Evaluations were carried out on 10 new types of materials to provide the Supply Section with an approved list. Eight new specifications were prepared on basis of the performance and laboratory investigations.

Physical Testing Section

J. J. Casey, P.Eng., Principal Testing Engineer

During the year some changes in testing procedures were made to accelerate the processing of samples. These changes involved:

1. A system of selective testing.
2. A detailed examination of the magnesium sulphate tested aggregate, in order to determine a correlation with the petrographic test.
3. The performance of duplicate specific gravity and absorption tests on all concrete mix design samples.

The central laboratory carried out tests on design and construction materials for the Central Region, and also on all of the research testing for the division. The regional laboratories undertook some of the pre-engineering and all quality control testing. Some of the tests carried out in all laboratories are shown in the table. In addition, approximately 12,000 individual tests on soils, aggregates, bitumens, cements, concrete and metals were carried out in the central laboratory.

The following development projects were undertaken at the central laboratory:

1. Evaluation of admixtures — to develop a specification and the selection of the most suitable concrete admixtures. A tentative specification was prepared.
2. Soil stabilization — a total of 564 tests were carried out on a number of materials submitted from 17 soil stabilization projects. These tests included freeze-thaw, wetting and drying, and adhesion tests.
3. Air dispersion of soils — a series of tests were carried out to determine the advantages of air over mechanical dispersion of soils, and also the effect of the strength of the dispersant used by the department as compared to that specified by A.S.T.M.

Research Section

M. D. Armstrong, P.Eng., Principal Research Engineer

The Research Section co-ordinates and directs the research activities of all sections. The section staff remained at the same level but several people were

loaned to this section for specific projects, thereby increasing the research work over the previous year. A list of active projects, together with brief statements, follows:

1. *Road Roughness Studies:* During 1962 about 4,000 miles of pavement was surveyed with the roughometer. The results indicate that the riding quality of new concrete pavements has improved year by year, whereas asphalt pavements were not as good as those of earlier years.

2. *Benkelman Beam Program:* Pavement inventory was carried out in the Fort William and Kenora districts. A total of about 1,000 miles of King's highways were included in this survey. Two new seasonal variation circuits were added to complete the coverage of the provincial highway system. The study of the seasonal variation of pavement performance is now in its third year.

3. *Testing of Bituminous Distributors:* An investigation of the performance of bituminous distributors used for surface treatment construction was started. A field test for measuring the uniformity of binder distribution was developed and successfully used on 11 contracts. The results of this investigation have led to the construction of a full-scale distributor calibration station, which will be operational in 1963.

4. *Asphalt Compaction Investigation:* A field investigation was carried out to determine the type of compaction equipment which would give the highest compaction results. The most effective type of roller was determined and several properties of the asphaltic concrete and its components were related to the compactability of the hot mix.

5. *Accelerated Curing of Concrete Test Specimens:* In modern, high-speed concrete pavement construction, the time which elapses between the making of test specimens and the availability of test results is a great drawback in the control of the quality of concrete. In order to shorten this time, a method has been developed which will predict the 28-day strength in 24 hours.

6. *Condition of Concrete Bridge Decks:* In recent years it has become apparent that asphalt wearing courses do not protect concrete bridge decks from damage by de-icing chemicals. Ontario has a large number of asphalt surfaced concrete bridge decks and this project was started in 1962 to determine the extent of the damage. A statistical sample of 150 bridges was chosen and 50 were investigated in 1962. The remainder will be investigated in 1963. The results of this survey will be used to make specific recommendations concerning the repair of any bridges found to be damaged, to make recommendations on a program of repairs and to recommend preventative action, including design changes.

7. *Cracking of flexible pavements:* Many flexible pavements develop cracks. This problem is particularly serious in the northern part of the province where a strange regular pattern of transverse cracking is frequently observed. The problem in southern Ontario is one of longitudinal cracking. In this study 20 locations throughout Ontario were chosen for a detailed examination of the seasonal movement of the pavements, and of the opening and closing of the cracks. This investigation has extended over two winters and one summer, and the results are now being used to select

a small number of sites exhibiting certain types of behaviour which will be thoroughly investigated.

8. *Drying of Aggregates for Hot Mix:* Adequate drying of aggregates has been a serious problem in southern Ontario. Two experiments were undertaken to study the effects and efficiencies of two dryers in tandem with varying sequences of aggregate flow from one dryer to the other. The results of this project will be reported as soon as additional work has been completed.

9. *Ontario Joint Highway Research Program:* For a number of years the department has assigned research programs to Queen's University and the University of Toronto. This program has been broadened to enable other universities in Ontario to take part.

SAMPLES TESTED IN CENTRAL, REGIONAL AND MOBILE LABORATORIES—1962-63

Type of Test	Regional Laboratories					Mobile Laboratories				
	South Western	Central	South Eastern	Northern	North Western	Kent Centre	Cornwall	St. Cath. & Dutton	Ottawa	Toronto
Aggregates	350	3,759	259	307	278	45	143	85	59	.....
Bituminous extractions	946	1,781	506	582	639	.....	.....	.....	25	12
Bituminous field compaction	71	.....	81	84	62	.....	.....	.....	.....	75
Bituminous mix design	20	65	24	23	4					
Bituminous plant checks	473	689	229	272	186	.....	.....	.....	.....	19
Compaction — soils and aggregates	3,019	2,086	120	59	267	1,377	.....	.....	.....	
Concrete beams	.....	22	106	.....	.....	43	136	225	17	
Concrete cylinders	3,959	4,731	1,920	1,637	608	1,453	1,966	1,200	2,212	
Granular base course	434	267	254	209	184	132	105	.....	81	
Granular borrow	206	840	220	191	128	48	56	.....	47	
Ice control	91	64	45	4	29	.....	.....	.....	8	
Routine soils and foundations	721	4,324	922	91	204	52	90	.....	104	
Totals	10,290	18,628	4,686	3,459	2,589	3,150	2,496	1,510	2,553	106

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA QUEENSWAY, 1962-63

T. C. MUIR, P.Eng., *Contract Control Engineer*

This year again saw a reduction in the construction work on the Trans-Canada Highway. However, the construction rate on the Ottawa Queensway maintained its customary pace.

Grading completed this year was approximately 57 miles as compared to 82 miles of the previous year. Paving completed this year was approximately 41 miles as compared to 180 miles the previous year. Finally, the number of structures completed this year was eight as compared to fifteen last year.

The important works carried out this year on the Trans-Canada Highway and the Ottawa Queensway are highlighted as follows:

Construction was maintained at an accelerated pace on Stage 3 of the Ottawa Queensway, with earth grading, structures and drainage work being performed from Island Park Drive to Elgin Street, a distance of 3.5 miles. Eleven structures were under construction, six of which were completed this year. The remaining five will be completed early in 1963. The westbound lane of concrete pavement will be open to traffic from Bronson Avenue to Carling Avenue interchange by the fall of 1963.

On the Trans-Canada Highway, in the Kingston District, grading on Highway 7 from Kaladar easterly for 8.56 miles was completed, bringing this section of Highway 7 up to Trans-Canada Highway standards.

In the Sault Ste. Marie District, concrete base widening, grading, drainage and hot mix paving was completed from Echo Bay to Sault Ste. Marie, a distance of 12.26 miles. Grading, culverts and granular base was completed from Haviland Bay to Chippawa Falls, and the placing of the hot mix base course was completed over this section. Grading, drainage and granular base was started from Chippawa Falls westerly to Secondary Highway 563, and the piles were driven this year for the Carp River bridge.

In the Fort William District, work continued on the 22-mile section of Highway 17 from English River westerly, with approximately half this section being paved with a base course and grading well under way in the other half section.

In the Kenora District, at each side of Dryden on Highway 17, grading work is being carried out on two contracts, from 10 miles east of Dryden to eight miles west of Dryden. Rock grading work continued on the six-mile contract on Highway 17 from the junction of Highway 17 and 71 at Longbow Corners westerly. An 11-mile paving contract was completed, finishing the paving to Trans-Canada Highway standards from Longbow Corners easterly to Vermilion Bay.

Total work on the Trans-Canada Highway completed to the end of the year was:

Grading and culverts	1,145.27 miles
Bituminous hot mix pavement	1,049.57 miles
Permanent bridge and structures built	151

Grading and Culverts

District	T.C. Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Ottawa	Q'way	Loretta Ave. to Bell St.	.50	.16	.34
Ottawa	Q'way	Bell St. to O'Connor	.90	.....	.06
Kingston	7	Kaladar easterly	8.56	.....	8.56
Sault Ste. Marie	17	Echo Bay to Sault Ste. Marie	12.56	.....	12.56
Sault Ste. Marie	17	Haviland Bay to Chippawa Falls	9.40	2.60	6.80
Sault Ste. Marie	17	Chippawa Falls westerly to Carp River	9.17	.....	1.90
Fort William	17	Little Firesteel River westerly	11.53	6.00	5.53
Fort William	17	English River easterly	10.40	.....	2.50
Kenora	17	Dryden westerly to Oxdrift	7.36	.....	5.58
Kenora	17	Dryden easterly	10.44	.82	8.83
Kenora	17	19 mi. east of Longbow Corners easterly	11.08	11.00	.08
Kenora	17	Longbow Corners westerly	5.73	.86	4.13
		TOTALS	97.63	21.44	56.87

Bituminous Hot Mix

Sault Ste. Marie	17	Echo Bay to Sault Ste. Marie	12.26	.....	12.26
Fort William	17	20 to 25.8 mi. east of Nipigon	5.80	.....	5.80
Fort William	17	East approaches to Jackfish River bridge	.08	.....	.08
Fort William	17	Little Firesteel river westerly	11.53	.....	11.53
Kenora	17	19 mi. east of Longbow Corners easterly	11.08	.....	11.08
		TOTALS	40.75	.....	40.75

Granular Base (New Grading)

Kingston	7	Kaladar easterly	8.56	.....	8.56
Kingston	7	Kaladar to Arden Side Road	8.84	.....	3.30
Sault Ste. Marie	17	Echo Bay to Sault Ste. Marie	12.26	.....	12.26
Fort William	17	Little Firesteel River westerly	11.53	6.00	5.53
Fort William	17	English River easterly	10.40	.....	2.50
Kenora	17	19 mi. east of Longbow Corners easterly	11.08	11.00	.08
Kenora	17	Dryden westerly to Oxdrift	7.36	.....	5.58
Kenora	17	Dryden easterly	10.44	.82	8.83
Kenora	17	Longbow Corners westerly	5.73	.86	4.13
		TOTALS	86.20	18.68	50.77

New Bridges 1962-63

District	T.C. Hwy.	Location
Ottawa	Q'way	Bridge 14 at C.P.R. near Preston St.
Ottawa	Q'way	Bridge 15 at Preston St.
Ottawa	Q'way	Bridge 16 at Rochester St.
Ottawa	Q'way	Bridge 17 at Booth St.
Ottawa	Q'way	Bridge 19 at Percy St.
Ottawa	Q'way	Pedestrian Overpass at Hammer Ave.
Sault Ste. Marie	17	Harmony River bridge
Kenora	17	Thunder Creek

TOTAL: 8 New Bridges

MINING, ACCESS, RESOURCES AND FORESTRY ROADS REPORT 1962-62

T. C. MUIR, P.Eng., *Secretary*

Mining and Access Roads Committee *(Interdepartmental)*

The Mining and Access Roads Committee, consisting of the Treasurer of Ontario as chairman, and the Ministers of the following departments: Highways, Lands and Forests, Mines, Municipal Affairs. It administers the funds voted by the Legislature in the Department of Mines' estimates. The committee administers the works carried out under the Roads-to-Resources Program and under the Mining Assistance Program of the Department of Mines. The committee also acts as an advisory committee for the works to be performed under the Forest and Access Roads and Trails Agreement and under the Forestry Agreement.

The Resources Roads Program is carried out under an agreement between the National Government and the Province of Ontario. Under this agreement the Department of Highways, acting as the agent for the Ontario Government, will design and supervise such program which eventually proposes an expenditure in northern and northwestern Ontario in the amount of $15,000,000 by March 31, 1967. The cost of such works would be shared between Ottawa and the Provincial Government, except in cases where a private enterprise would benefit directly. In such cases the costs would be shared equally by the two governments and the private company concerned.

The following was accomplished this year:

NEW LISKEARD DISTRICT

Resources Road — Chapleau to Foleyet Road — Foleyet West:

Last year the district completed the earth grading in this section, making driving possible between Foleyet and Chapleau; however, no granular material had been placed. This year saw the placing of the granular surface to complete the works necessary under the Resources Roads Agreement.

Mining Assistance Roads:

Under mining assistance from the Department of Mines, further minor improvements and maintenance was made on the access road to the Kam-Kotia Mine, a project which was shared between the Province, the Statute Labour Board and the mining company concerned.

Also under the Mining Assistance Program, a road was constructed from Highway 122 easterly 6.5 miles into the Jones & Laughlin Steel Corporation development. This work involved mainly the rebuilding of the old bush road and realignment, with such costs being shared equally between the Province and the Jones & Laughlin Steel Corporation.

SAULT STE. MARIE DISTRICT

Resources Road — Chapleau to Foleyet — Chapleau Easterly

Similar to the adjoining New Liskeard District, grading on this Chapleau to Foleyet road was completed the previous year, with the crushed gravel being placed on this year to complete the requirements of the Resources Road Agreement and also to provide access from Foleyet to Chapleau over a gravelled road.

FORT WILLIAM DISTRICT

Resources Road — Spruce River Road, Highway 17 (East of Port Arthur) to Cheeseman Lake — approximately 74 miles:

This project is a Resources Road project, shared equally between the Ottawa Government, the Ontario Government and the Abitibi Power and Paper Company Limited.

The previous year a grading contract was completed from Mile 30 to Mile 54.5. This year, clearing was carried out extending this to Mile 74 (from Highway 17). At the same time, a grading contract was in progress from Mile 54.5 to Mile 64.5. At the present time it is 50 per cent completed and is expected to be completed by mid-summer of next year. A grading contract would be called in 1963 over the clearing contract previously completed between Mile 64.5 and Mile 74 near Cheeseman Lake.

This procedure follows the policy of having a clearing contract carried out during the winter, to be followed by a grading contract the following year, in order to assure year-round employment.

Resources Road — Savant Lake southerly to Highway 17 — approximately 81 miles:

This year saw the completion of two contracts, from 15 to 21 miles south of Savant Lake and from 39.5 to 46 miles south of Savant Lake which, though leaving a gap between Mile 28 and Mile 39.5 south of Savant Lake, permitted the access from Pickle Crow at the extreme north end of Secondary Highway 599 to Highway 17 in the vicinity of Ignace by the use of the resource road construction completed to date and the private timber company roads which were allowed to be used by the travelling public by arrangements between the Ontario government and the timber companies concerned.

Regarding the above gap between Miles 28 and 39.5, a clearing contract was completed this year over that section so that grading contracts could be called in 1963 to complete this gap by the end of the contruction season of 1963 and thus at that time have the road constructed from Savant Lake on the C.N.R. to vicinity of Valora on the other line of the C.N.R.

Additional contracts will be called under this program to complete from Mile 46 to Mile 81 during 1963, 1964 and 1965.

Resources Road — Lingman Lake Road — Central Patricia northerly:

A 10-mile clearing contract was completed from Central Patricia northerly on this route which was determined by magnetometer survey of the Ottawa Government in order to promote exploration of the untapped mineral areas in far northwestern Ontario, as indicated by the magnetometer survey.

KENORA DISTRICT

Mining Assistance Road:

The approaches to the structure over the Sturgeon River at Superior Junction were completed, thus completing the access from Sioux Lookout to Superior Junction, connecting with a low-class road from Superior Junction to Alcona.

Miscellaneous Work:

Further location survey work was carried out for approximately 11 miles on the road extending from Caribou Falls northerly in order to investigate the

possibilities of providing access to the nickel development at Werner Lake. This completed 17 miles of survey of the approximately 22-mile route.

Resources Roads, 1962-63

Financed Partially by the Province under the Dominion-Provincial Roads-to-Resources Agreement

District	Location	Year Begun	Total Miles	Miles Compl. Prev. Yrs.	Miles Compl. 1962–63	Miles to Compl.
New Liskeard	Foleyet west	1958	34.0	34.0	.....	.....
Sault Ste. Marie	Chapleau east	1958	26.0	26.0	.....	.....
Fort William	Nakina to Terrier Lake	1959	47.0	47.0	.....	.....
	Savant Lake to Hwy. 17	1959	90.0	22.0	13.5	54.5
	Hwy. 17 to vicinity of Cheeseman Lake	1959	74.5	54.5	5.0	15.0
Kenora	Minaki south	1959	21.5	21.5	.....	.....
	TOTALS		293.0	205.0	18.5	69.5

Mining and Access Roads, 1962-63
Financed Partially by the Province

New Liskeard	Kamiskotia Lake southerly	1960	15.0	10.0	5.0	.....
	Adams Mine Road (Dane easterly)	1962	6.5	.....	6.5	.....

Mining and Access Roads, 1962-63
Financed Entirely by the Province

Kenora	Approaches to structure over Sturgeon River at Superior Junction	1961	1.2	1.0	0.2	.....

FORESTRY ROADS 1962-63

By an agreement entered into between the National and Provincial governments under the Forestry Assistance Agreement dated January, 1962, the Department of Highways, acting as an administrative agent for the Provincial Department of Lands and Forests, completed the following:

District	Location	Type of Work
Bancroft	From Alice Twp. Line to Ignace Lake (Algonquin Park)	Grading — 13 miles.
Sault Ste. Marie	Dalton to Missanabie	Grading — Dalton northerly approx. 7 miles.
Fort William	Northern Lights Lake Road — from western terminus of Sec. Hwy. 588 to Northern Lights Lake	(1) Grading — from Mile 17 to Mile 24. (2) Clearing right-of-way from Mile 24 to Mile 28.6.

Under the terms of the Forestry Assistance Agreement entered into January, 1962, and extending for two years, the Department of Highways, as aforementioned, acted as agent for the Ontario Department of Lands and Forests in the constructing of major highways. However, the Department of Lands and Forests itself, under this agreement, would be constructing roads of a minor nature and thus are presented in the annual report of the Department of Lands and Forests.

MUNICIPAL ROADS DIVISION

J. P. HOWARD, P.Eng., *Municipal Engineer*

The 1962 subsidizable expenditures by the municipalities increased by $9,676,000.00 over 1961. This was a somewhat lesser annual rate than that which prevailed from 1953 to 1960, as shown in the following table:

Expansion of Aid to Municipalities (in $1,000's)

Year	Total Expenditure by Municipalities	Subsidies under The Highway Improvement Act	Development Road Expenditures	Total Aid
1953	$ 54,452	$27,190	$1,759	$28,949
1954	64,926	32,787	1,662	34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952
1959	124,411	62,412	7,880	70,292
1960	140,438	70,444	8,135	78,759
1961	142,010	71,542	7,786	79,328
1962	151,686	76,231	7,718	83,948

SUBSIDIES SECTION

C. R. WILMOT, P.Eng., Subsidies Engineer

975 Municipalities and 40 Indian Reserves received subsidy under The Highway Improvement Act for expenditures made in 1962. The aggregate amounts were as follows:

Type of Municipality	Road Mileage	Approved Appropriations	Approved Expenditures	Subsidy
Metro. Toronto	348.0	$ 31,000,000	$ 30,437,310	$15,218,655
Counties*	9,246.6	38,782,300	35,035,598	19,025,880
Townships†	59,542.2	53,256,305	46,022,547	26,082,619
Urbans	9,566.2	49,719,092	40,193,137	15,903,508
TOTALS	70,703.0	$172,757,697	$151,686,592	$76,230,662

* Includes Suburban Commissions.

† Includes Improvement Districts and Indian Reserves.

METROPOLITAN TORONTO

The subsidizable expenditures made by Metropolitan Toronto increased by about 14 per cent over those of 1961. A breakdown of the 1962 expenditures is as follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted)	$22,877,664.59	$2,111,467.38	$24,989,131.97
Bridges and culverts	3,586,188.45	112,163.88	3,698,352.33
Winter control		1,749,825.57	1,749,825.57
TOTAL APPROVED EXPENDITURES..	$26,463,853.04	$3,973,456.83	$30,437,309.87

The following works formed a major part of the expenditures in 1961:

Structures completed		7
Structures under construction		9
Elevated Expressway (F. G. Gardiner)		
	Portion completed	1.69 miles
	Under construction	1.60 "
Road construction	Completed (Victoria Park Ave.)	0.5 "
	Under construction (Don Mills Road Extension and Don Valley Parkway)	3.88 "
Pavement widening—completed		7.45 "
	under construction	3.78 "
Resurfacing of existing pavement		8.15 "
New paving		1.93 "
Intersection improvements		18
Major repairs to bridges		1

COUNTY ROADS

(Part VII, The Highway Improvement Act)

The 1962 expenditures on county and suburban roads were $3.8 millions above those of 1961 with most of the increase in road construction and winter control. A breakdown is as follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$18,897,723.92	$ 8,378,213.67	$27,275,937.59
Bridges and culverts	4,739,259.36	291,009.63	5,030,268.99
Winter control		2,727,391.70	2,727,391.70
Total Approved Expenditures	$23,636,983.28	$11,396,615.00	$35,033,598.28

Some understanding of the type and magnitude of the work represented by these figures can be gained from the following summary of the principal items of work performed by the counties and suburban commissions.

Construction Items

1. Roads:		
	New or rebuilt gravel and stone surface	699.1 miles
	Low cost bituminous surfaces	189.1 "
	High cost bituminous surfaces	223.5 "
	Graded to standard cross-section	371.1 "
2. Bridges and culverts:		
	Bridges (10′ span and over) — Concrete, 97; Steel, 25; Timber, 4. Total	126
	Culverts (under 10′ span) — Concrete, 40; Metal Arch, 30; Wood, 1. Total	71
	Pipe culverts	3,063

Maintenance Items

1. Surface maintenance and drainage:		
	Roadside ditching	274.6 miles
	Bituminous surface treatment	616.4 "
	Dust laying with oil	462.4 "
	Dust laying with calcium chloride	2,207.6 "
	Clay-gravel stabilization	114.0 "
	Resurfacing — Crushed gravel	618.967 cu. yds.
	Crushed stone	93.275 tons

2. Winter control — Snow removed from	9,246.6	miles
Snow fence erected	7,181.0	"
3. Weed and brush control — By spraying	6,155.8	"
By cutting	5,274.5	"
4. Bridges repaired	130	
Culverts repaired	457	

Tables of county and suburban road expenditures summarized chronologically, mileages, accumulated expenditures and subsidies paid, and individual county expenditures by type of work are in the appendix.

COUNTY SUBURBAN ROADS

(Part VIII, The Highway Improvement Act)

Thirty-four cities and separated towns in the Province have joined with their neighbouring counties to form Suburban Road Commissions. These commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1962 mileages, expenditures and government aid are shown below.

(The Smiths Falls Suburban Road Commission in Lanark County was inactive in 1962.)

County	Suburban Road Commission	Mileage	Approved Expenditure	Government Subsidy
Brant	Brantford	62.1	$ 242,945.45	$ 135,874.88
Carleton	Ottawa	108.7	946,066.76	508,477.16
Elgin	St. Thomas	25.0	255,903.33	134,237.58
Essex	Riverside	4.0	45,361.35	22,992.55
	Windsor	49.0	402,982.93	209,174.25
Frontenac	Kingston	41.9	130,285.19	66,521.33
Grey	Owen Sound	34.7	66,648.33	33,727.22
Hastings	Belleville	16.2	40,273.92	21,973.00
Kent	Chatham	27.1	63,231.91	31,727.17
Lambton	Sarnia	25.4	127,980.72	68,420.02
Leeds and Grenville	Brockville	18.4	38,876.37	19,564.00
	Gananoque	9.1	13,392.59	7,128.51
	Prescott	2.8	16,346.31	8,402.40
	Smith's Falls	5.2	11,363.43	5,956.30
Lincoln	St. Catharines	46.8	246,831.50	128,273.68
Middlesex	London	65.5	450,246.28	243,871.53
Northumberland and Durham	Trenton	12.7	26,956.87	13,754.45
Ontario	Oshawa	21.7	212,709.99	109,408.94
Oxford	Ingersoll	4.5	3,262.27	1,635.55
	Woodstock	11.0	21,755.78	10,936.93
Perth	St. Mary's	6.0	18,652.25	9,518.25
	Stratford	19.1	64,438.96	32,418.26
Peterborough	Peterborough	50.0	165,213.34	83,992.65
Simcoe	Barrie	18.2	41,342.13	20,685.59
Stormont, Dundas and Glengarry	Cornwall	61.0	114,302.33	58,936.31
Waterloo	Galt	33.9	116,998.29	58,716.68
	Kitchener	60.1	340,523.09	175,019.81
	Waterloo	23.0	89,180.60	46,817.78
Welland	Niagara Falls	17.8	93,834.24	47,207.07
	Welland	15.8	105,714.08	62,133.00
Wellington	Guelph	36.0	72,223.33	36,184.00
Wentworth	Hamilton	126.1	453,008.30	230,791.42
York	Toronto-York	186.9	1,908,718.20	1,019,045.05
Totals		1,245.7	$6,947,570.42	$3,663,523.32

INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

575 Townships, 18 Improvement Districts and 40 Indian Reserves received aid under this Part of the Act in 1962. The expenditures made by these 633 road authorities totalled as follows:

	Construction	Maintenance	Total
Roads (winter control excluded)	$15,757,962.08	$17,590,275.06	$33,348,237.14
Bridges and culverts	6,441,082.37	723,617 86	7,164,700.23
Winter control		5,509,609.59	5,509,609.59
Total Approved Expenditures	$22,199,044.45	$23,823,502.51	$46,022,546.96

These expenditures provided for the major items of work shown below:

Construction Items

1. Roads:
   - New or rebuilt gravel and stone surfaces ..... 1,620.5 miles
   - Low cost bituminous surfaces ..... 177.6 "
   - High cost bituminous surfaces ..... 152.4 "
   - Graded to standard cross-section ..... 2,135.7 "
2. Bridges and culverts:
   - Bridges (10′ span or over) — Concrete, 177; Steel, 22; Timber, 40.
     Total 249
   - Culverts (under 10′ span) — Concrete, 146; Metal arch, 300; Timber, 100.
     Total 550
   - Pipe culverts installed 7,638

Maintenance Items

1. Surface maintenance and drainage:
   - Roadside ditching ..... 1,873.4 miles
   - Bituminous surface treatment ..... 737.9 "
   - Dust laying — with oil ..... 2,279.8 "
   - with calcium chloride ..... 6,300.6 "
   - Clay-gravel stabilization ..... 213.0 "
   - Resurfacing — crushed gravel ..... 2,496,664 cu. yds.
   - crushed stone ..... 1,133,573 tons
   - pit-run gravel ..... 1,103,734 cu. yds.
2. Winter control — Snow removed from ..... 48,956.0 miles
   - Snow fence erected ..... 3,249.4 "
3. Weed and brush control — By spraying ..... 18,282.0 "
   - By cutting ..... 20,515.0 "
4. Bridges repaired 723
   - Culverts repaired 5,194

CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

In keeping with the moderate upward trend of expenditures made by the counties and townships, the 1962 subsidized expenditures of the 31 cities, 7

separated towns, 149 towns and 158 villages rose some $3 million above their 1961 expenditures. A breakdown of these expenditures is as follows:

	Construction	Maintenance	Total
Roads (winter control excluded)	$16,611,868.20	$13,664,288.91	$30,276,157.11
Bridges and culverts	1,621,209.52	375,410.14	1,996,618.66
Winter control	.....	7,920,360.37	7,920,360.37
Total Approved Expenditures	$18,233,077.72	$21,960,059.42	$40,193,137.14

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendix.

DIRECT EXPENDITURES SECTION

P. D. PATTERSON, P.Eng., Direct Expenditures Engineer

DEVELOPMENT ROADS

(Part XI, The Highway Improvement Act)

182 projects involving 962.7 miles of road were the subject of $7,717,544.19 of Development Road Aid during the fiscal year. Thirty Development Road projects were completed and the designations revoked with 152 being carried forward as part of the 1963 programme.

The initiation of pre-engineering designations has permitted more study of projects and more effective programming. Of the 182 designations made during the fiscal year 37 were for pre-engineering only. Further designations for construction are made when the plans and estimates are approved, the necessary property has been acquired and funds are available in the Development Road Budget.

48 County projects accounted for $4,108,568.28 (53.2 per cent) of the expenditure on development roads with the remaining $3,608,975.91 (46.8 per cent) being applied to 134 Township projects.

Work completed during the fiscal year is summarized as follows:

Grading	145.8 miles
Paving	143.5 "
Structures	4

Locations, mileages of designation and expenditures on projects under designation in 1962 are listed in the Appendix.

ROADS IN UNINCORPORATED TERRITORY

(Part XII, The Highway Improvement Act)

In territory without municipal organization the Department continued its co-operation with Statute Labour Boards and settler's groups. Under this Part of the Act, 204 of Statute Labour Boards and 295 groups were aided in the

maintenance and improvement of local roads. Distribution of aid by districts is listed in the following table:

SUMMARY OF UNINCORPORATED TOWNSHIPS

EXPENDITURES IN THE FISCAL YEAR 1962-1963

Municipal District	Value of Statute Labour on Other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10. Nipissing	$ 2,756.82	$ 6,093.24	$ 8,850.06	.69
11. Huntsville	17,947.00	16,720.79	34,667.79	.48
12. Parry Sound	76,974.13	221,163.61	298,137.74	.74
13. Nipissing	55,934.93	174,917.45	230,852.38	.76
14. Temiskaming and Cochrane South	45,125.62	74,849.19	119,974.81	.62
16. Cochrane North	65,803.97	116,003.41	181,807.38	.71
17. Sudbury	67,444.09	140,273.21	207,717.30	.68
18. Algoma	35,067.04	105,528.00	140,595.04	.75
19. Thunder Bay	57,145.67	157,364.19	214,509.86	.73
20. Kenora and Rainy River	82,301.90	115,303.40	197,605.30	.58
Totals	$506,501.17	$1,128,216.49	$1,634,717.66	.69

SIDEWALK CONSTRUCTION

(Part XIII, Section 100 (4) The Highway Improvement Act)

A township, with the specific approval of the Minister and where necessary of a county, may construct a sidewalk along a King's Highway or a county road, and the township may apply to the Department for a 50 per cent grant towards the cost when the work is done and paid for. In 1962 the following payments of subsidy on sidewalk construction were made:

Russell Township	Police Village of Russell (County Roads No. 3 and 6)	$1,253.00
Clarence Township	Police Village of Clarence (County Road No. 8)	506.25
Cambridge Township	Village of St. Albert (County Road No. 7)	750.00
King Township	Police Village of King City (County Road No. 11)	1,950.41
Hamilton Township	Hamlet of Gores Landing	502.19
Middleton Township	Hamlet of Courtland (County Road No. 1)	2,387.50
Tiny Township	Hamlet of Lafontaine (County Road No. 6)	1,840.00
Tuckersmith Township	Hamlet of Egmondville (County Roads No. 3 and 12)	360.00
Nichol Township	Hamlet of Salem (County Road No. 58)	338.00
Total		$9,887.35

PLANS APPROVAL SECTION

B. R. HEAVYSEGE, P.Eng., Plans Approval Engineer

Plans and profiles for county road construction were approved for 346 miles of road. Included in this mileage were 48 miles of development roads, the plans for which were all approved in Head Office. Most of the plans on county by-law work were approved at district level but were in turn checked when submitted to Head Office.

All large development road jobs are being carried out by unit price or equipment rental contracts. Pre-engineering, contract preparation and supervision are carried out by county forces, district parties or consulting engineers and this office acts in a liaison capacity in co-ordinating this work.

Since the inception of county road standards, new county road construction has steadily improved and roads are now being built to take care of future traffic volumes and by incorporating proper design features, maintenance costs have dropped on newly constructed roads.

DISTRICT No. 1—CHATHAM

G. U. HOWELL, P.Eng., District Engineer

Construction

Concrete paving continued on Highway 401, commencing at the east junction of the Tilbury By-pass and Highway 2. Paving of the north lanes was completed to County Road 10, a distance of 13.67 miles. Two interchanges, providing access to the city of Chatham, at Bloomfield Road and Kent Centre, were completed and opened to traffic travelling over 401 on the Bloomfield and Communication Roads. Grading of Highway 401 was completed this fiscal year, enabling the letting of concrete pavement contracts from Kent Centre to the Kent/Elgin county line. Four underpasses at major county roads were completed, and the interchange structure at the east junction of Tilbury By-pass was started.

The Jackson Park overhead on Ouellette Avenue, Windsor, spanning the Canadian Pacific and Essex Terminal Railways, was opened to traffic. This new road via Highway 3B provides a direct route to the city's main thoroughfare.



County Road, surface treatment (Chatham District).

Grading was completed on Highway 7 from the village of Arkona southerly to junction of Highway 22, a distance of 4.85 miles, and from Grand Bend southerly to junction of Highway 82, a distance of 9.14 miles. Two grading and paving contracts were awarded late in the year from Blenheim westerly for a distance of 10.20 miles on Highway 3. Also on Highway 3, a channelization was completed at the junction of road to Rondeau Park, and a new concrete culvert built at the Cooper Drain, two miles west of Port Alma.

Maintenance

General maintenance operations were carried out in the district during 1962–63. Winter maintenance operations were greatly increased due to the heavy and



Development Road 471, Lampton County Road 3, at Bear Creek (Chatham District).

severe winter. Additional sand and salt were used over other years. All large ploughs were fitted with new type of signs and additional lights to increase safety during the winter months.

Three hot mix patching contracts and four crushed gravel contracts for shouldering were carried out.

The electrical crew has been extremely busy, having installed two sets of traffic signals, one at the main intersection in Kingsville on Highway 18 and the other at Malden Road and Highway 3. A temporary set was installed on the Jackson Park overhead contract at the intersection of Eugenie and Ouellette. This will be replaced next year by a permanent traffic signal. Another temporary arrangement was made for a detour over the construction of a culvert. This is the first time a set of signals has been used for this purpose. It proved very successful. There were also ten sets of traffic signals installed on Highway 39 on Tecumseh Road in Windsor. This type of set consists of an inter-connected signal system. They have not been in operation long enough to show results.

They have also installed two sets of street lighting, one on Highway 3B at the intersection of Dougall Avenue and Ouellette Avenue near Windsor, and the other at the west junction of Highway 7 and Highway 21, Reece's Corners. The latter has been complimented on the decrease of accidents by the police and others.

Various tests have been carried out for the control of weeds along the boulevard of Highway 401 from Tilbury to Windsor. Also a test plot has been sprayed with a chemical used for the retardation of grass growth. Results will not be known until next year.

A new patrol was formed to take care of the maintenance on the new section of Highway 401.

Two-way radio system was installed and in operation by November 1962. This system has proved to be of excellent assistance in our winter maintenance operations.

One new salt shed and two patrol offices were erected this year at Comber, Port Alma and Cottam patrol yards, respectively.

A five-bay metal garage and office building was begun under the supervision of Department of Public Works at the patrol yard, Reece's Corners.

A ten-bay metal garage and office building was started under the supervision of the Department of Highways at our new patrol yard at Kent Centre on Highway 401. It will eventually serve two patrols.

Running Creek 3 bridge on Highway 40 was bailey reinforced and the concrete deck reinforced by coverings of laminated timber. First of its type in this district it has proved very successful.

Seeding and straw mulching operations were increased one and a half times over last year. Also the planting of shrubs and trees were doubled. These operations occurred mainly on Highway 401.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
3	Intersection with Rondeau Park Road	0.19	1962	0.19	550
3B	Dougall, Ouellette Avenues and Jackson Park overhead, Windsor	2.14	1962	2.14	15,666
401	Structures and ramps at Bloomfield Road	0.47	1962	0.29	835
401	Kent Centre and Bloomfield Road interchange legs	1.46	1962	0.58	3,786
401	Structure deck and ramps at Charing Cross Road	0.38	1962	0.38	2,225
401	Structure, deck and ramps at Merlin town line road	0.41	1962	0.41	1,199
401	Structure, deck and ramps at Harwich/Howard town line	0.37	1962	0.28	1,209
401	Interchange at east junction with Hwy. 2	0.58	1962	0.39	4,327
401	Structure and approaches, Mull sideroad, Harwich Twp.	0.38	1962	0.38	489
401	Maidstone-Sandwich South town line	0.33	1962	0.33	731
	TOTALS	6.71		5.37	31,017

Bituminous Cold Mix

Location	Tons Placed 1962–63
Patrols, various	998

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
3	Blenheim to 5 mi. east of Morpeth	1.1	1,121
40	Wallaceburg to Sarnia	....	.....
79	Bothwell to Watford	4.2	4,200
3	Essex to Oldcastle	....	.....
114	Jct. Hwys. 98 and 114 to Jct. Hwys. 3 and 114	....	.....
401	Windsor to Tilbury	3.3	3,335
	TOTALS	8.6	8,656

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
3B	Jackson Park overhead, Windsor	1961	1962	Reinforced concrete, steel plate girder
401	Interchange at Kent Centre — Communication Road	1961	1962	Reinforced concrete, continuous girder
401	Interchange at Kent Centre — McGregor Creek	1961	1962	Rigid frame, prestressed deck
401	Interchange at Kent Centre — McGregor Creek tributary	1961	1962	Reinforced concrete, steel beam
401	Interchange at Bloomfield Road — County Road 27	1961	1962	Reinforced concrete, steel beam
401	Interchange at Bloomfield Road — Flook and Hinton drain	1961	1962	Reinforced concrete, rigid frame
401	Underpass at Mull sideroad	1962	1962	Reinforced concrete, steel beam
401	Underpass at Charing Cross Road	1962	1962	Reinforced concrete, steel beam
401	Underpass at Merlin town line road	1962	1962	Reinforced concrete, steel beam
401	Underpass at Howard-Harwich town line	1962	1962	Reinforced concrete, steel beam

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63	Pave. Width
3B	Dougall and Ouellette Avenues, Windsor	1.00	1962	1.00	18,082	2/24 Ft.

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Sq. Yds. Placed 1962–63	Pave. Width
401	From road between Con. 6 and 7, Raleigh Twp. to east Jct. Hwy. 2	7.33	1962	7.33	121,323	24 Ft.*
401	West end of Kent Centre interchange to road between Con. 6 and 7, Raleigh Twp.	9.93	1962	6.34	105,344	24 Ft.†
	TOTALS	17.26		13.67	226,667	

* Pavement width, 1.16 miles: 2/24 feet.
† Pavement width, 0.90 miles: 2/24 feet.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
3	Intersection with Rondeau Park Road	0.19	403
3B	Dougall, Ouellette Avenues and Jackson Park overhead, Windsor	2.14	935
401	Interchange at Bloomfield Road	0.54	86
401	Underpass at Mull sideroad	0.38	899
401	Underpass at Charring Cross Road	0.38	1,628
401	Underpass at Merlin town line road	0.41	713
401	Underpass at Howard-Harwich town line	0.37	952
	TOTALS	4.41	5,616

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
2	St. Joachim to Windsor	10.00	4,982
3	Maidstone to Windsor	10.00	5,016
78	Wallaceburg to Dresden	10.50	5,494
98	Tilbury to Jct. of Hwys. 98 and 2	10.20	5,118
	Totals	40.70	20,610

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63
3	Intersection with Rondeau Park Road	0.19	1962	.....	0.19
3	Cooper drain culvert, 2 mi. west of Port Alma.	0.10	1962	.....	0.10
3B	Dougall, Ouellette Avenues and Jackson Park overhead, Windsor	2.14	1961	.....	2.14
7	Arkona south limits to Hwy. 22	4.85	1962	..	4.85
21	Intersection with Hwy. 82 to Grand Bend south limits	9.14	1962	...	8.14
401	Centre line road east to Howard-Harwich township line	4.45	1961	4.25	0.20
401	Hwy. 21 westerly to Howard-Harwich township line	4.53	1961	4.23	0.30
401	Bloomfield Road easterly to west end of Kent Centre	4.86	1961	3.00	1.86
401	Kent Centre interchange to Centre line road.	3.12	1961	2.00	1.12
401	Hwy. 21 easterly to County Road 20	4.59	1961	1.50	3.09
401	Aldborough-Orford township line to County Road 20	4.64	1962	.....	4.64
401	Interchange at Bloomfield Road	0.54	1962	.....	0.54
401	Underpass at Mull sideroad	0.38	1962	.....	0.38
401	Underpass at Charring Cross Road	0.38	1962	.....	0.38
401	Underpass at Merlin town line road	0.41	1962	.....	0.41
401	Underpass at Howard-Harwich town line	0.37	1962	.....	0.37
401	Maidstone-Sandwich South town line	0.33	1962	.....	0.33
	Totals	45.02		14.98	29.04

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
3	Intersection with Rondeau Park Road	0.19	1962	0.19	4,307
3B	Dougall, Ouellette Avenues and Jackson Park overhead, Windsor	2.14	1961	2.14	62,757
7	Arkona south limits to Hwy. 22	4.85	1962	4.85	168,692
21	Intersection with Hwy. 82 to Grand Bend south limits	9.14	1962	8.14	164,219
401	Kent-Elgin county line to Hwy. 21	9.77	1962	.....	50,850
401	Hwy. 21 to Kent Centre interchange	10.93	1962	9.40	319,739
401	Kent Centre interchange to 7.33 mi. east of Jct. Hwy. 2	9.93	1962	9.93	344,222
401	From 7.33 mi. east of Jct. Hwy. 2 to Hwy. 2	7.33	1962	7.33	168,119
401	Maidstone-Sandwich South town line	0.33	1962	0.33	3,886
	Totals	54.61		42.31	1,286,791

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
3	Port Alma	Patrol office	1962	July, 1962
3	Cottam	Patrol office	1962	November, 1962
98	Comber	Salt shed	1962	October, 1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	16		
Off-road parks maintained	9		
Roads snowploughed and kept open, King's Highways	16		639
Roadside picnic places maintained	71		
Routine maintenance, King's Highways			639
Salt for de-icing roads (raw)		6,665	639
Salt in sand, stockpiled		304	
Sand for winter maintenance		4,185	
Scale houses maintained	3		
Seeding by department's forces (sq. yds.)	2,545,840		
Shrubs received and planted this year	5,331		
Signs erected or replaced	5,034		
Snow fence erected, dismantled, stored			40
Traffic lights installed this year	14		
Weed control (gals.)	542		283
Zone painting on King's Highways (gals.)	6,453		639
Zone painting on Secondary Highways (gals.)	57		6.25

DISTRICT No. 2—LONDON

W. L. FRASER, P.Eng., District Engineer

Construction

The fiscal year 1962–1963 was an active year in London District with 38 contracts on the construction programme. Twelve carry-over contracts were completed; 17 additional contracts were let of which six were completed.

On Highway 401 between Tempo at Highway 4 and Kent County line — western boundary of the district, a distance of 33 miles — all grading was completed. Reinforced concrete pavement was placed on the west-bound lane between Tempo and West Lorne at Highway 76, a distance of 24 miles. This section also includes three structural steel bridges, one of which was opened to traffic in November.



Highway 401—concrete paving (London District).

Hot mix pavement was placed on Highway 76 between Woodgreen and West Lorne, providing an improved access from Highway 2 to Highway 401.

Extensive construction work is being done within the city of London to alleviate an increasing traffic flow. On Highway 4, in the Broughdale area of the city, 2.2 miles of undivided four-lane highway with a singing median was completed, while at the south limits, grading for the Highbury Avenue extension is nearing completion. The latter will provide the city with a second access to Highway 401.

Grading, drainage and hot mix were 56 per cent completed on Highway 3 between St. Thomas and New Sarum. Most of the 7.6 miles under construction received one base coat of hot mix pavement before the onset of winter. One rigid-frame structure was erected at Catfish Creek on Highway 3, two miles east of New Sarum.



Highway 3—bridge construction, Catfish Creek (London District).

Hot mix pavement was placed on Highway 59 from Highway 3 at Courtland to 7.5 miles south.

Work was started on the widening of Horner Creek bridge on Highway 2 at Princeton. This old structure is being reconstructed to conform to modern design standards.

Thirteen miles of hot mix resurfacing was placed on Highway 401 from junction of Highway 2 at Eastwood westerly.

Maintenance

The most severe winter condition in the past decade was experienced during last winter. Maintenance demand reached a high from early December to mid March. There were 24,917 tons salt and 62,506 tons sand used for deicing.

Three bridges were painted during the fiscal year at the following locations: Eastwood at the junction of Highways 2 and 401, on Highways 2 and 19 in Thamesford, and at Norwich on Highway 59 over Otter Creek.

Three buildings, all steel, were under construction with an anticipated completion late next spring. One concrete block building was completed at the district garage in Lambeth. This will be used as stock rooms for the district stock.

Illumination was installed at two locations, at Delaware and junction of Highways 2 and 81. The illumination of the Eastwood interchange was completed.

One county road was assumed in Norfolk County from two miles north of Simcoe to Scotland, approximately 9 miles; routine maintenance was carried out on this section.

Surface treatment was carried out on Highway 59 from Norwich to the junction of Highways 59 and 3. This job was very successful.

Forestry operations during the year consisted of planting 7,118 shrubs and small trees, along with the seeding of 3,426,720 square yards. Tree planting at two service areas was carried out, 37 large trees were planted by contract, with smaller trees planted by Department of Highways forces.

Zone painting was carried out on 675 miles of highway, using 8,130 gallons of paint.

The bridge maintenance repair crew carried out repairs on the Sydenham River bridge in the town of Strathroy, Gentlemen Creek bridge on Highway 2 approximately two miles west of Melbourne. Steel beams were used to reinforce the deck on the structure in the town of Norwich.

There were 8,117 signs erected by Department of Highways forces during the fiscal year.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
3	C.N.R.	Town of Tillsonburg	2 flash. lights, bell; 1 wigw., bell
3	N.Y.C.	South of Jct. Hwy. 4*	
24	LE & NER	At Bloomsburg	2 flash. lights, bell; 1 wigw., bell
73	C.P.R.	Harrietsville	2 flash. lights, bell; 1 wigw., bell

* Improved by adding gates.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
3	Aylmer to St. Thomas	7.61	1962	4.26	19,637
4	London north to 0.9 mi. north of Hwy. 22 and Calamity Corners	2.20	1962	2.20	21,252
4	Clandeboye curve revision, Centralia vicinity, 3.3 to 5.0 mi. south of Exeter	2.38	1962	2.38	10,356
59	"A" 0.2 mi. southerly 7.5 mi., "B" Port Rowan sideroad, southerly 2.7 mi.	10.2	1962	6.10	14,310
73	Jct. of Hamilton Road and Hwy. 73 to 0.88 mi. south of Harrietsville	5.30	1962	5.30	21,675
76	West Lorne to Hwy. 2, including channelization at Eagle	7.3	1962	7.3	21,783
401	Realignment of service road at Wellington Road, approximately 6 mi. west of Hwy. 74, Con. III, Twp. of Westminster	0.40	1962	0.40	1,165
401	Hwy. 4 westerly to Southwold-Dunwich township line*	12.12	1962	.....	3,670
401	12.0 mi. west of Hwy. 4, westerly to Hwy. 76†	12.45	1962	.....	1,080
401	Underpass at Elgin County Road 19, Southwold Twp. bridge 6, 5.5 mi. west of Hwy. 4.	0.42	1962	0.42	838
	TOTALS	35.81		28.36	115,766

* Primarily concrete paving contracts.
† 45% of, total quantity required.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
81	Hwy. 22 to Hwy. 7*	12.56	37,409	1,310

* Carried out by Stratford District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
59	From Hwy. 3 to southerly on Hwy. 59	8.67	13,931
59	Woodstock to Norwich*	17.0	3,985
401	From Hwy. 2 (Eastwood) westerly to Sweaburg Road	5.18	41,888
401	From Sweaburg Road to Hwy. 19	4.55	48,427
	TOTALS	35.40	108,231

* Hot mix patching contract.

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
59	Norwich to Jct. of Hwys. 59 and 3	10.5	32,658	1,585

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
2	Horner Creek, 1 mi. west of Princeton	1962	.....	Beam and slab
3	Catfish Creek (Lot 27, Con. 8, and 9, Yarmouth Twp.)	1962	.....	Rigid frame
4	St. Johns Bridge at Arva	1962	.....	Beam and slab
4	Medway Creek structures at Birr	1962	.....	Rigid frame
76	Simpsons bridge over Thames River, 2 mi. south of Hwy. 2	1961	1962	Structural steel
81	Mud Creek structure, 4 mi. north of Hwy. 22.	1961	1962	Rigid frame
81	McCubbin's bridge extension on County Road 12A, approximately 7 mi. north of Hwy. 22	1961	1962	Extension to existing structure
401	Aldborough Twp. bridge at Fleming Creek, Lot 1, Con. VI, Aldborough Twp.	1961	.....	Rigid frame
401	Underpass Elgin County Road 19, 5.5 mi. west of Hwy. 4	1962	1962	Rigid frame
401	Underpass, Middlesex County Road 15A, 3 mi. west of Hwy. 4	1962	.....	Structural steel
401	Currie Road interchange, north of Dutton	1962	.....	Rigid frame
401	Southwold Twp. bridge 6, Lot 1, 8, Con. III, Southwold Twp.	1962	1962	Beam and slab
401	Dodds Creek, south service road, Lot 24, Con. III, Southwold Twp.	1962	1962	Rigid frame
401	Dodds Creek, north service road, Lot 24, Con. IV, Delaware Twp.	1962	1962	Rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63	Pave. Width
401	From Hwy. 4 westerly to Southwold-Dunwich town line	0.5	1962	0.5	1,653	24 Ft.
401	12.0 mi. west of Hwy. 4 westerly to Hwy. 76	0.9	1962	0.9	1,270	24 Ft.
	TOTALS	1.40		1.40	2,923	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Sq. Yds. Placed 1962–63	Pave. Width
401	From Hwy. 4 westerly to Southwold-Dunwich town line	12.12	1962	12.12	179,415	24 Ft.
401	12.0 mi. west of Hwy. 4 westerly to Hwy. 76	12.45	1962	11.95	191,177	24 Ft.
	TOTALS	24.07		24.07	370,592	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
3	Aylmer to St. Thomas	4.49	88,801
4	London north to 0.9 mi. north of Hwy. 22 and Calamity Corners	2.20	49,587
4	Clandeboye curve revision, Centralia vicinity, 3.3 to 5.0 mi. south of Exeter	2.38	35,609
73	Jct. Hamilton Road and Hwy. 73 to 0.88 mi. south of Harrietsville	5.30	56,533
76	From Hwy. 2 southerly for 2 mi.	.70	7,316
76	From West Lorne to Hwy. 2, including channelization at Eagle	7.3	31,472
81	Mud Creek structure, approximately 5.5 mi. north of Strathroy	.31	3,120
126	From County Road 37, 0.53 mi. south of Hwy. 401, northerly 3.28 mi. to Thames River	2.56	4,862
401	Realignment of service road at Wellington Road, approximately 6 mi. west of Hwy. 74, Con. III, Twp. of Westminster	0.4	3,850
401	Underpass at Elgin County Road 19, Southwold Twp. bridge 6, 5.5 mi. west of Hwy. 4	0.42	4,679
401	Middlesex County Road 15A, underpass 3.0 mi. west of Hwy. 4, including relocation of county road and north and south service roads	1.65	17,200
401	Hwy. 4 westerly to Southwold-Dunwich town line	12.12	182,460
401	12.0 mi. west of Hwy. 4, westerly to Hwy. 76	11.95	198,525
401	Hwy. 76 westerly to Elgin-Kent county line	1.79	28,076
401	Hwy. 2, Eastwood westerly to Sweaburg Road	5.18	23,506
401	Sweaburg Road to Hwy. 19 and patching westerly to Hwy. 4	7.69	26,468
	TOTALS	66.44	762,064

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Ton Placed 1962–63
3	Aylmer to St. Thomas	7.61	1962		4.49
4	London north to 0.9 mi. north of Hwy. 22 and Calamity Corners	2.20	1962		2.20
4	Clandeboye curve revision, Centralia vicinity, 3.3 to 5.0 mi. south of Exeter	2.38	1962		2.38
73	Jct. of Hamilton Road and Hwy. 73 to 0.88 mi. south of Harrietsville	5.30	1962		5.30
76	From Hwy. 401 interchange northerly 4.5 mi.	4.5	1961	4.1	0.4
81	Mud Creek structure, approximately 5.5 mi. north of Strathroy	0.31	1961		0.31
401	Realignment of service road at Wellington Road, approximately 6 mi. west of Hwy. 74, Con. III, Twp. of Westminster	0.40	1962		0.40
401	From 0.2 mi. east of Dunwich-Southwold township line, westerly to road allowance between Lots 12 and 13, Dunwich Twp.	5.69	1961	5.12	0.57
401	From 2 mi. east of Hwy. 76, westerly	5.4	1961	4.9	0.5
401	From 3.4 mi. west of Hwy. 76, westerly 5.5 mi. to the Elgin-Kent county line	5.5	1961	1.7	3.8
126	From County Road 37, 0.53 mi. south of Hwy. 401, northerly 3.28 mi. to Thames River	3.28	1962		2.56
	TOTALS	42.57		15.82	22.91

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
3	Aylmer to St. Thomas	7.61	1962	4.49	158,151
4	London north to 0.9 mi. north of Hwy. 22 and Calamity Corners	2.20	1962	2.20	93,360
4	Clandeboye curve revision, Centralia vicinity, 3.3 to 5.0 mi. south of Exeter	2.38	1962	2.38	81,290
73	Jct. of Hamilton Road and Hwy. 73 to 0.88 mi. south of Harrietsville	5.30	1962	5.30	97,659
76	From Hwy. 2 southerly for 2 mi.	2.0	1961	0.70	24,654
76	From West Lorne to Hwy. 2, including channelization at Eagle	7.3	1962	7.3	27,156
81	Mud Creek structure, approximately 5.5 mi. north of Strathroy	0.31	1961	0.31	6,731
126	From County Road 37, 0.53 mi. south of Hwy. 401 northerly 3.28 mi. to Thames River	3.28	1962	2.56	17,821
401	Realignment of service road at Wellington Road, approximately 6 mi. west of Hwy. 74, Con. III, Twp. of Westminster	0.4	1962	0.4	9,355
401	From 0.2 mi. east of Dunwich-Southwold township line westerly to road allowance between Lots 12 and 13, Dunwich Twp.	5.69	1961	0.57	345
401	From 3.4 mi. west of Hwy. 76, westerly 5.5 mi. to the Elgin-Kent county line	5.5	1961	5.5	5,670
401	Middlesex County Road 15A, Underpass 3.0 mi. west of Hwy. 4, including relocation of county road and north and south service roads	1.94	1962	1.65	51,670
401	Underpass at Elgin County Road 19 Southwold Twp. bridge 6, 5.5 mi. west of Hwy. 4.	0.42	1962	0.42	4,536
401	Hwy. 4 westerly to Southwold-Dunwich town line	12.12	1962	12.12	158,489
401	12.0 mi. west of Hwy. 4 westerly to Hwy. 76.	12.45	1962	11.95	148,671
401	Hwy. 76 westerly to Elgin-Kent county line..	9.42	1962	8.95	116,135
	Totals	78.32		66.80	1,001,693

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
81	Jct. Hwys. 22 and 81	Patrol garage	1961	1962
135	2 mi. east of Jct. Hwys. 2 and 135	Service building	1961	1962
401	Jct. Hwys. 97 and 401	Patrol garage	1961	1962
401	Jct. Hwy. 401 and Elgin County Road 14	Patrol garage	1962	N.C.
	District garage at Lambeth	Stockroom	1962	N.C.

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	3		
Calcium dust layer on gravel roads		70	
Off-road parks maintained	15		
Roads snowploughed and kept open, King's Highways	18		689.32
Roadside picnic places maintained	29		
Routine maintenance, King's Highways	18		689.32
Salt for de-icing roads (raw)		24,917	
Salt in sand, stockpiled		2,112.9	
Sand for winter maintenance		62,506	
Scale houses maintained	2		
Seeding by department's forces (sq. yds.)	3,426,720		
Shrubs received and planted this year	7,118		
Signs erected or replaced	8,117		
Snow hedges planted this year	2,287		
Traffic lights installed this year	1		
Weed control			726
Zone painting on King's Highways (gals.)	8,130		675

DISTRICT No. 3—STRATFORD

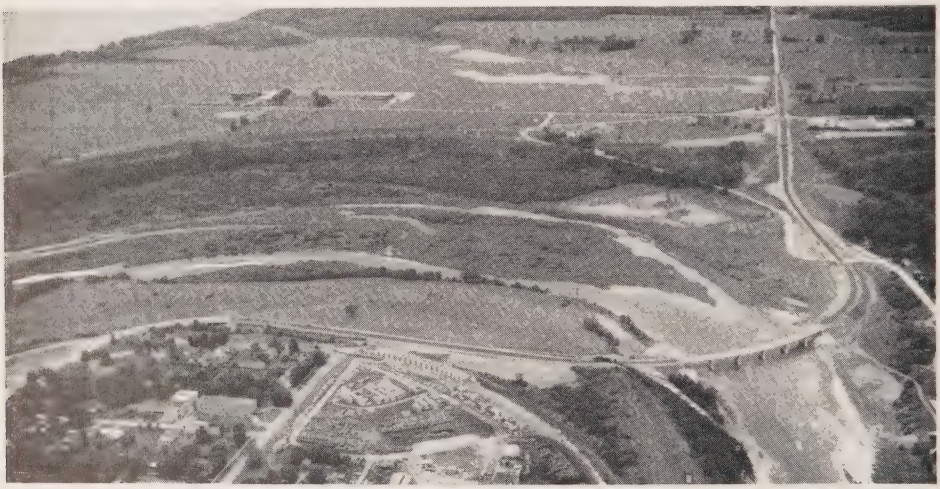
L. D. BARRETT, P.Eng., District Engineer

Construction

The fiscal year 1962–63 saw the completion of seven carry-over contracts and five new contracts. Work commenced on eight contracts which will be carried over and completed during the 1963 construction season.

Grading, drainage, granular base, structure and paving was completed on Highway 21, Grand Bend to St. Joseph.

Grading, drainage and structure for the four-lane Freeport Diversion, Highway 8 was completed. This contract will be paved during the 1963 construction season.



Highway 21—Goderich Diversion (Stratford District).

Grading, drainage and granular base was completed on Highway 4, Clinton to Blyth. This contract was paved with a base course and will be completed in stages during the next few years.

Three structures and approaches on Highway 97 west of Galt were completed. Work on two structures, one mile west of Bright and one mile east of Hickson were begun and will be completed during the 1963 construction season.

Grading, drainage, granular base and hot mix paving was completed on Highways 23 and 86 on the connecting link in the town of Listowel. This work also included curb and gutter along with a storm sewer system.

Grading, drainage, granular base and hot mix paving with extensive curb and gutter and storm sewer work was completed on Highway 23 in the town of Palmerston. The street was widened on the connecting link and parking facilities improved.

Grading, drainage, granular base and hot mix paving with curb and gutter and a complete new storm sewer system was completed on Highway 97 in the village of Plattsville. Parking facilities and drainage were greatly improved.

The Ausable River bridge and approaches was completed on Highway 4, 1.25 miles south of Hensall.

Work of grading, drainage, granular base and three structures, North Otter, South Otter and Mildmay bridge between Mildmay and Walkerton on Highway 9, was begun in 1962 and will be completed during the 1963 construction season. Alignment was improved and narrow structures eliminated.

Grading, drainage, granular base and hot mix paving was begun on Highway 6, Arthur southerly for 5.25 miles and will be completed during the 1963 construction season.

Work was begun late in 1962 on concrete culverts on Highway 19 from the junction of Highways 7 and 19 to Uniondale. Grading, drainage, granular base and hot mix paving will be completed on this section during the 1963 construction season. Soil-cement stabilization will be used on this contract for the first time in Stratford District.

Work on the Zetland bridge over the Maitland River, 1.6 miles west of Wingham on Highway 86 was begun in 1962 and will be completed during the 1963 construction season. This will replace a very old narrow steel truss structure.

With the exception of trimming, work was completed on an invitation bid contract of culvert and approaches on Highway 4, approximately four miles south of Clinton.

Work was begun and will be completed in 1963 on an intersection improvement at Wagner's Corners, one mile south of St. Jacobs on Highway 85. This will greatly improve the turning movement to and from a busy county road.

Maintenance

Gravel was added to all gravel surfaces and treated with calcium chloride prior to priming. Weed control operations were carried out on 434 miles of King's



Highway 86—Bailey Bridge, Maitland River (Stratford District).

Highway. Crushed gravel was added to shoulders where necessary. Due to frost action extensive repairs were carried out on Highway 23 south of Mitchell and on Highway 6 north of Fergus. Three metal-clad patrol buildings were constructed for the Galt, Guelph and St. Marys patrols, and one salt shed was constructed on the Erin patrol. A bridge-painting contract was let for painting 24 bridges on the district. Maintenance was carried out on 21 off-road parks and on 169 roadside picnic places. Over 2,090,000 square yards were seeded by department forces, while 3,600 trees and 56 shrubs were planted. Zone painting was carried out on 604.5 miles of paved road. Due to a very long, severe winter three additional snow blowers were required at various times to keep the roads widened out. Some 2,849 signs were erected or replaced and 526 dead and dangerous trees were removed by department forces. A contract for stump removal was let and 502 stumps removed. Routine maintenance was carried out on 622 miles of King's Highway.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
24	C.N.R.	Lot 2, Con. 4, Twp. of Guelph, County of Wellington, 125.93 mi., Fergus subdivision	Flash. lights, bell
7	C.N.R.	Lots 17 and 18, Con. 15, Twp. of Blanshard, County of Perth, 2.18 mi., Forest subdivision	Flash. lights, bell
7	C.N.R.	Lot 19, Con. M.R.C., Twp. of Blanshard, County of Perth, 4.12 mi., Forest subdivision	Flash. lights, bell
85	C.N.R.	Lots 45 and 46, Con. G.C.T., Twp. of Woolwich, County of Waterloo, 9.16 mi., Waterloo subdivision	Flash. lights, bell
86	C.P.R.	Lot 18, Con. 14, Twp. of Wellesley, County of Waterloo, 52.02 mi., Goderich subdivision	Flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
23	Listowel to Teviotdale	13.1	1960	1.95	9,100
21	Maitland River and vicinity	1.46	1960	0.73	7,100
23, 86	Town of Listowel	1.74	1962	1.74	9,595
97	Malcolm's bridge, approximately 3.4 mi. east of Hickson	0.38	1961	0.38	678
23	Town of Palmerston	1.14	1962	1.14	5,949
6	Arthur, southerly	5.25	1962	3.20	3,850
97	Village of Plattsville	2.60	1962	2.60	6,908
4	Clinton to Blyth	9.0	1962	9.0	10,044
21	Grand Bend to St. Joseph	7.40	1962	7.40	21,496
4	Ausable River, 1.3 mi. south of Hensall	0.27	1962	0.27	634
4	Beane drain culvert, approximately 4 mi. south of Clinton	0.10	1962	0.10	56
7, 8	New Hamburg By-pass	.....	1962	.....	1,978
	Totals	42.44		28.51	77,388

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
136	Jct. Hwy. 24 to Orangeville	7.7	25,653	607.40
86	Jct. Hwy. 7 to 5 mi. east of Elmira	8.0	31,270	635.40
86	2 mi. to 6 mi. west of Elmira	3.8	.....	.....
97	Plattsville, easterly	8.5	23,109	483.60
19	Kintore to Jct. Hwy. 7	9.2	30,543	779.90
	Totals	37.2	110,575	2,506.30

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
83	Exeter west to Jct. Hwy. 21	13.5	43,200	1,818.99
86	Elmira easterly	2.0	6,132	237.10
	Totals	15.5	49,332	2,056.09

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
97	Alder Creek structure, approximately 5.5 mi. east of Plattsville	1961	1962	Reinforced concrete
97	Washington Creek structure, approximately 1.8 mi. east of Plattsville	1961	1962	Reinforced concrete
97	Malcolm's bridge structure, approximately 3.4 mi. east of Hickson	1962	1962	Reinforced concrete and prestressed beams
8	Block line road structure, Hwy. 8 diversion	1961	1962	Reinforced concrete and prestressed beams
4	Ausable River bridge, 1.25 mi. south of Hensall	1962	1962	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
23	Listowel to Teviotdale	13.1	8,300
21	Maitland River and vicinity (Goderich)	1.46	4,700
21	Grand Bend to St. Joseph	7.14	21,630
4	Clinton to Blyth	9.0	4,994
9	Mildmay to Walkerton	5.25	4,998
97	Village of Plattsville	2.60	3,368
4	Clinton to Blyth	9.0	10,764
21	Grand Bend to St. Joseph	7.40	12,287
23	Department of Highways pit, approximately 0.5 mi. north of Kirkton	.....	5,000
8	New patrol yard 0.5 mi. west of Clinton	.....	4,992
7	New patrol yard, approximately 1.5 mi. east of New Hamburg	.....	4,997
19	Kintore to Hwy. 7	.....	4,995
	Totals	54.95	91,025

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
97	0.4 mi. west of County Road 15 to Plattsville, east limits	7.08	903
86	Jct. Hwys. 7 and 86 to Cox Creek	8.01	5,963
86	Waterloo-Wellington line to 5.27 mi. east of Dorking	3.75	3,274
19	Kintore to Jct. Hwys. 7 and 19	9.24	4,377
136	Jct. Hwys. 24 and 136, Coulterville to Orangeville, south limits	7.17	5,171
	Various locations, pavement patching	.....	2,473
	Various locations, shoulders	.....	7,749
	Totals	35.25	29,910

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63
21	Grand Bend to St. Joseph	7.14	1961	5.55	1.59
23, 86	Town of Listowel	1.74	1961	.....	1.74
97	Washington Creek, approximately 1.8 mi. east of Plattsville	0.37	1961	.....	0.37
97	Alder Creek structure, approximately 5.5 mi. east of Plattsville	0.36	1961	.....	0.36
97	Malcolm's bridge over Thames River, approximately 3.4 mi. east of Hickson	0.38	1961	.....	0.38
4	Clinton to Blyth	9.0	1961	.....	9.0
9	Mildmay to Walkerton	5.25	1962	.....	5.25
86	Zetland bridge over Maitland River, 1.6 mi. west of Wingham	0.45	1962	.....	0.45
23	Town of Palmerston	1.14	1962	.....	1.14
6	Arthur southerly	5.25	1962	.....	3.20
97	Village of Plattsville	2.60	1962	.....	2.60
4	Ausable River bridge, 1.3 mi. south of Hensall	0.27	1962	.....	0.27
4	Beane drain culvert, approximately 4.0 mi. south of Clinton	0.10	1962	.....	0.10
85	Approximately 1.0 mi. south of St. Jacobs	0.20	1962	.....	0.20
19	Jct. Hwy. 7 to Uniondale	4.53	1962	.....	80 per cent Culverts
	TOTALS	38.78		5.55	26.65

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63	Tons Placed 1962–63
21	Grand Bend to St. Joseph	7.14	1961	5.55	1.59	141,337
8	Freeport diversion and Block line interchange	2.01	1962	.....	2.01	28,240
23, 86	Town of Listowel	1.74	1962	.....	1.74	49,075
97	Washington Creek, approximately 1.8 mi. east of Plattsville	0.37	1962	.....	0.37	8,042
97	Alder Creek, approximately 5.5 mi. east of Plattsville	0.36	1962	.....	0.36	9,250
97	Malcolm's bridge, approximately 3.4 mi. east of Hickson	0.36	1962	.....	0.36	10,208
4	Clinton to Blyth	9.0	1962	.....	9.00	458,050
9	Mildmay to Walkerton	5.25	1962	.....	5.25	249,200
23	Town of Palmerston	1.14	1962	.....	1.14	51,245
6	Arthur westerly	5.25	1962	.....	3.20	191,445
97	Village of Plattsville	2.60	1962	.....	2.60	32,948
4	Ausable River, approximately 1.3 mi. south of Hensall	0.27	1962	.....	0.27	5,724
4	Beane drain culvert, approximately 4 mi. south of Clinton	0.10	1962	.....	0.10	1,340
85	Approximately 1.0 mi. south of St. Jacobs	0.20	1962	.....	0.20	575
	TOTALS	35.79		5.55	28.19	1,236,679

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
97	Jct. Hwys. 97 and 401, Galt	Equipment storage	1961	August, 1963
86	Jct. Hwys. 7 and 86, Guelph	Equipment storage	1961	August, 1963
19	Jct. Hwys. 7 and 19, St. Marys	Equipment storage	1961	July, 1963
8	Jct. Hwys. 4 and 8, Clinton	Equipment storage	1962	Incompl.
83	Jct. Hwys. 21 and 83, Grand Bend	Equipment storage	1962	Incompl.
24	2.0 mi. south of Erin	Salt storage	1962	August, 1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	24		
Calcium dust layer on gravel roads		185.35	37.14
Development roads built			4.6
Off-road parks maintained	21		
Roads snowploughed and kept open, King's Highways	18		622.16
Roadside picnic places maintained	169		
Routine maintenance, King's Highways			622.16
Salt for de-icing roads (raw)		13,393.5	
Salt in sand, stockpiled		2,125.4	
Sand for winter maintenance		75,193.05	
Scale houses maintained	1		
Seeding by department's forces (sq. yds.)	2,090,880		
Shrubs received and planted this year	56		
Signs erected or replaced	2,849		
Snow fence erected, dismantled, stored			170.00
Snow hedges planted this year			0.2
Weed control			434.00
Zone painting on King's Highways (gals.)	,468		604.50
Trees planted	600		

DISTRICT No. 4—HAMILTON

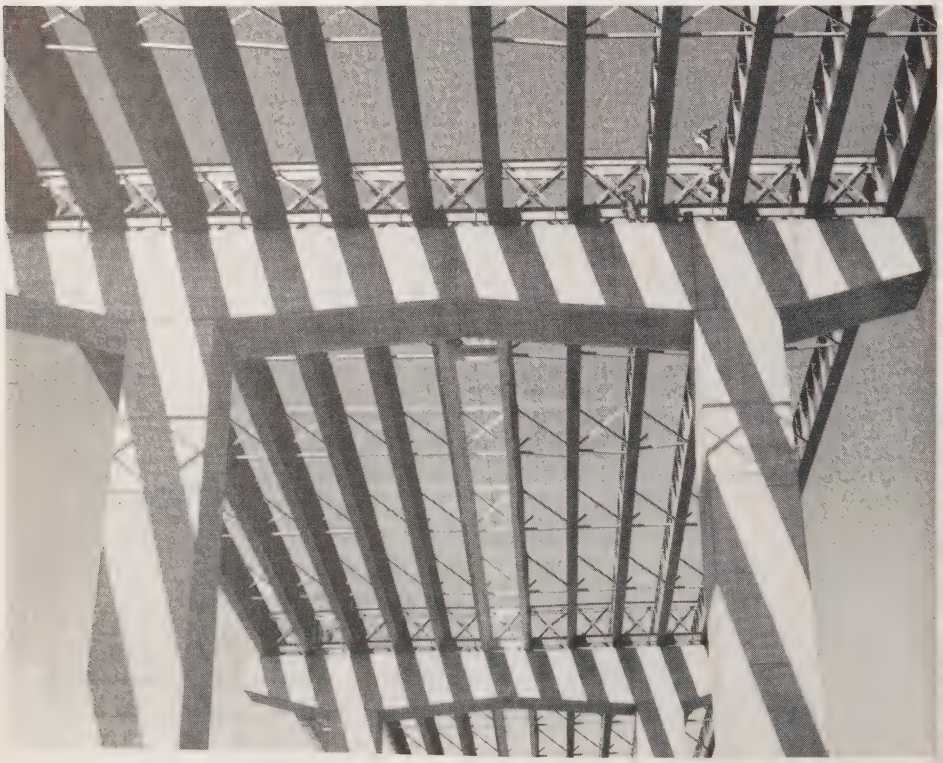
H. GREENLAND, P.Eng., District Engineer

Construction

Work continued on the Garden City Skyway with the completion of the structural steel and start on the concrete deck. The St. David's Road interchange, relocated Highway 8 and south service roads have been completed and a contract awarded for the administration building, toll plaza and associated grading. Construction on neighbouring Highway 405 was continued on schedule and a start made on the new Highway 406 in the city of St. Catharines.

Granular base and paving was completed on the north-bound lane of the Queen Elizabeth Way from Fort Erie to Niagara Falls. The Welland Avenue overpass crossing the Queen Elizabeth Way was also completed in St. Catharines.

During the past year construction continued on Highway 403 from Freeman to the King-Main interchange in the city of Hamilton. On Highway 20, widening and paving work progressed between the Queen Elizabeth Way and King Street in Stoney Creek; the Burlington Canal lift bridge approaches were completed and a start made on the grading and paving from Highway 2 to Woodward Avenue. Reconstruction of seven miles of road through the Six Nations Indian Reserve was started under a joint project with the Dominion Government. A one-mile section of Highway 99 was completed which improved the intersection



Q.E.W.—Garden City Skyway (Hamilton District).

with Brant County Road 32. Work was commenced on the grading of Highway 102 from Highway 2 in Hamilton to York Street in Dundas. A new structure at Norval where Highway 7 crosses the west branch of the Credit River was completed. In Guelph the intersection of College Avenue and Highway 6 was reconstructed, providing the Ontario Agricultural College with improved access. The approaches to two service centres was completed on Highway 401 approximately four miles east of Highway 24. Approximately one quarter mile of Highway 8 was reconstructed in Beamsville, providing improved drainage facilities and pavement widening.

Maintenance

Four bridges were painted by contract during the summer months.

Two service centres were opened on Highway 401 between Highways 6 and 24. Park roadways at the centres were partially built and gravelled in the fall.

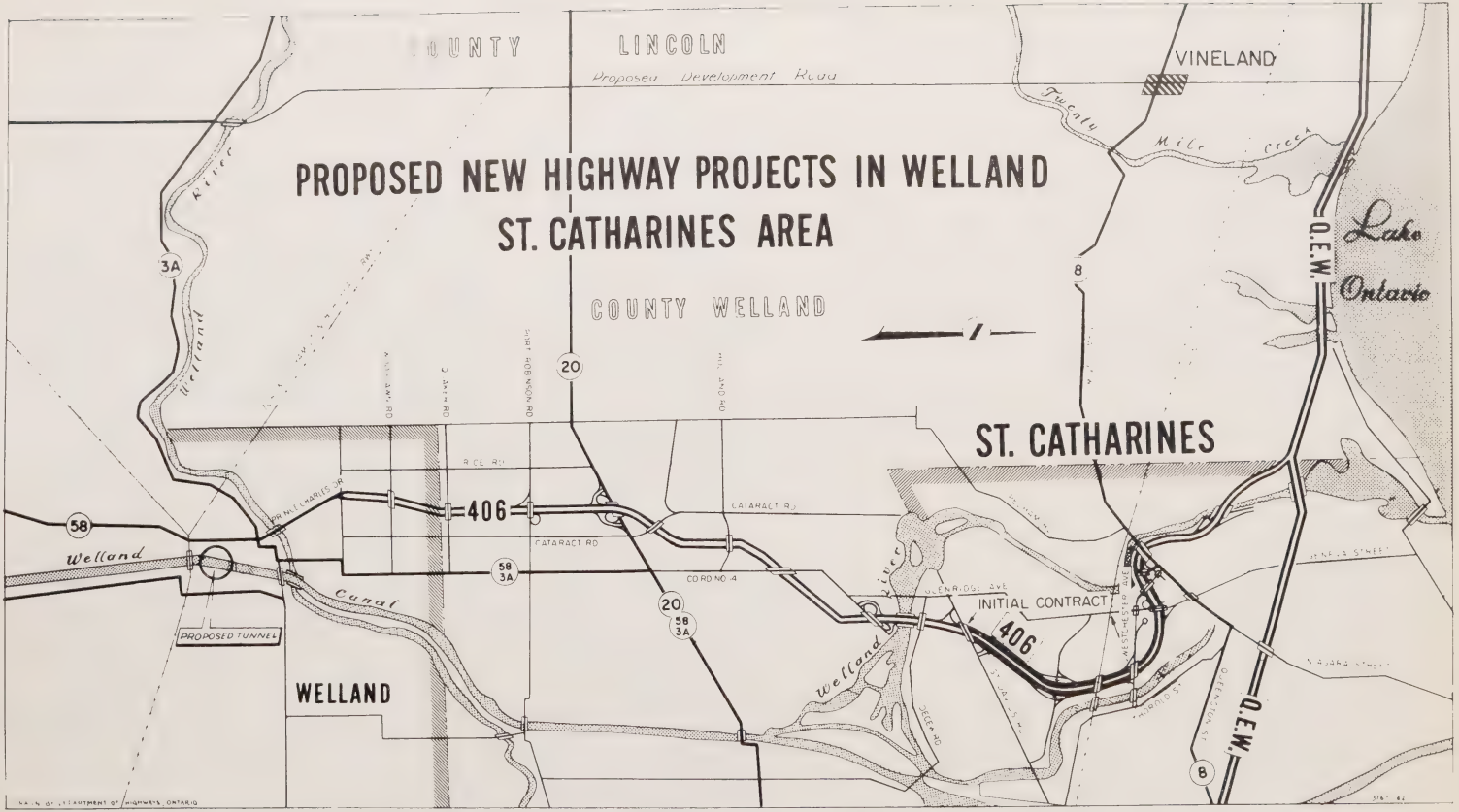
Highway 8, Dundas to Peter's Corners, was resurfaced with "dix-seal". It is the first time this has been done in Hamilton District and has proven very satisfactory.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
3	1,000 ft. east of Jct. Hwy. 6, Jarvis	0.04	1962	0.04	79.46
6	Jct. Hwy. 6 and College Avenue, Guelph	0.10	1962	0.10	409.81
7	West branch, Credit River, Norval	0.48	1962	0.48	2,335.00
8	Village of Beamsville	0.32	1962	0.32	600.33
20	Burlington Canal lift bridge	0.50	1960	0.50	2,218.26
20	King Street to C.N.R. subway, Stoney Creek	1.75	1962	1.75	15,247.00
99	Intersection of County Road 32	0.68	1962	0.68	1,990.00
Q.E.W.	Welland Avenue bridge approaches	0.50	1961	0.50	2,396.04
Q.E.W.	Niagara Falls to Sodom Road	8.16	1961	8.16	38,902.21
Q.E.W.	Hwy. 8 and St. Davids interchange	4.00	1961	4.00	15,038.00
Q.E.W.	Sodom Road to Fort Erie	8.72	1962	8.72	41,531.18
401	Lots 8 and 9, Con. XI, Twp. of Puslinch service area site	0.60	1962	0.60	1,465.28
401	Lots 8 and 9, Con. XI, Twp. of Puslinch, south side Hwy. 401 service area site	0.60	1962	0.60	1,614.56
403	Chedoke Expressway, Wolfe Island	0.45	1961	0.45	527.45
403	York Boulevard, Hamilton	0.40	1962	0.40	2,977.00
403	Freeman interchange westerly	2.70	1961	2.70	8,970.00
403	Snake Road easterly	2.00	1962	1.20	3,938.00
403	King-Main interchange	1.01	1962	0.40	1,589.00
405	Q.E.W. to just west of Hwy. 8	2.72	1961	0.25	1,933.00
405	Just west of Hwy. 8 to Queenston-Lewiston bridge	3.00	1961	1.90	3,991.00
	TOTALS	38.73		33.75	147,752.58

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
57	Bismark, Beckett's bridge	8.65	12,378.95
8	Dundas west limits to Peters Corners	5.40	2,422.99
3, 3A, 3C, 8, 20, 58	Vicinity of Port Colborne and Fort Erie	7.60	7,583.99
5, 6, 7	Vicinity of Guelph and Hamilton	2.80	2,793.14
3, 6	Vicinity of Port Dover and Jarvis	5.00	4,999.55
	TOTALS	29.45	30,178.62


PROPOSED NEW HIGHWAY PROJECTS IN WELLAND
ST. CATHARINES AREA
COUNTY WELLAND
LINCOLN
Proposed Development Road
VINELAND
Twenty Mile Creek
Lake Ontario
Welland River
Welland Canal
PROPOSED TUNNEL
WELLAND
ST. CATHARINES
406
INITIAL CONTRACT
CATARACT RD
CDRD NO. 4
QUEENSTON ST
O.E.W.
3A
20
58
8

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
99, 56, 25	Vicinity of Copetown, Binbrook, Milton, Acton	24.00	70,037	3,236.98

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
7	Lot 12, Con. XI, Esquesing Twp. at Norval	1961	1962	Prestressed concrete
8	Lot 2, Con. IX, Niagara Twp.	1961	1962	Continuous girder
403	Lots 1 and 2, Con. I, East Flamborough Twp. in Burlington	1961	.....	Continuous girder
403	Lots 6 and 7, Con. I, East Flamborough Twp. in Burlington	1961	1962	Continuous girder
403	Lots 6 and 7, Con. I, East Flamborough Twp. in Burlington	1961	1962	Continuous girder
403	Lot 8, Con. I, East Flamborough Twp. in Burlington	1961	1962	Reinforced concrete arch
403	Lot 8, Con. I, East Flamborough Twp. in Burlington	1961	1962	Reinforced concrete arch
403	Lot 9, Con. I, East Flamborough Twp. in Burlington	1961	1962	Prestressed beams
403	Lot 12, Con. I, East Flamborough Twp.	1961	1962	Reinforced concrete
403	Wolfe Island interchange at Jct. Hwys. 6 and 403	1962	1962	Slab and beam
403	Lot 28, Con. I, West Flamborough Twp.	1961	1962	Continuous steel girder
403	Lot 28, Con. I, West Flamborough Twp.	1961	1962	Reinforced concrete
403	Lot 29, Con. I, city of Hamilton	1961	1962	Rigid frame, concrete
403	Lot 29, Con. I, city of Hamilton	1961	.....	Continuous steel girder
403	Main Street West, Hamilton	1961	1962	Continuous steel girder
405	Lot 138, Niagara Twp.	1961	.....	Continuous girder
405	Lots 137 and 140, Niagara Twp.	1961	1962	Concrete slab
405	Stamford Twp.	1961	.....	Steel beam girder
405	Lot 2, Stamford Twp.	1961	1962	Steel beam girder
405	Lot 2, Stamford Twp.	1961	1962	Steel beam in concrete
51	Lot 2, Con. 9, Niagara Twp.	1961	1962	Continuous girder
451	City of St. Catharines	1960	.....	Continuous girder

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63	Pave. Width
2, 6	York Boulevard, Hamilton	0.48	1962	0.48	2,466.50	2/24 Ft. and Various
451/8	Hwy. 8 and St. Davids interchange	4.00	1962	4.00	15,083.00	24 Ft. and Various
	TOTALS	4.48		4.48	17,549.50	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Sq. Yds. Placed 1962–63	Pave. Width
405	Q.E.W. to just west of Hwy. 8	2.72	1962	2.72	57,616	2/24 Ft.
451/8	Hwy. 8 and St. Davids interchange	2.00	1962	2.00	28,579	24 Ft. and Various
	TOTALS	4.72		4.72	86,195	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
7	West branch of the Credit River, Norval	0.48	1,051
20	King Street to C.N.R. subway, Stoney Creek	1.75	58,671
57	Bismark to Beckett's bridge	8.65	7,202
99	Intersection of Brant County Road 32	0.68	1,080
Q.E.W.	Welland Avenue bridge approaches, St. Catharines	0.50	2,804
Q.E.W.	Niagara Falls to Sodom Road	8.16	20,588
Q.E.W.	Hwy. 8 and St. Davids interchange	1.84	14,389
Q.E.W.	Sodom Road to Fort Erie	8.72	12,944
403	Chedoke Expressway, Wolfe Island	1.48	349
403	York Boulevard, Hamilton	1.65	682
403	Freeman interchange westerly	3.10	5,325
403	Snake Road easterly	2.00	833
405	Q.E.W. to just west of Hwy. 8	2.72	9,061
405	Just west of Hwy. 8 to new Queenston-Lewiston bridge	3.00	8,319
403	King-Main interchange, Hamilton	1.01	11,588
Development Road			
	Ohsweken southerly and westerly to Brantford and Tuscarora township line	4.20	3,468
	TOTALS	49.94	158,354

Crushed Gravel and Stone on Roads by Department's Forces

Tons Hwy. No.	Location	Miles 1962–63	Total Placed 1962–63
Q.E.W.	Bronte to Fort Erie	71.2	1,396
2	Bronte to Brantford	28.7	470
3	Fort Erie to Simcoe	85.5	1,529
3A	Chambers Corners to Welland	9.3	321
3C	Fort Erie to Ridgeway	6.8	64
5	Palermo to Brant county line	27.7	396
6	Port Dover to Guelph	59.3	221
7	Guelph to Hwy. 10	30.4	421
8	Galt to Niagara Falls	57.8	1,261
8A	St. Davids to Queenston	2.8	.....
20	Burlington to Niagara Falls	45.9	1,815
24	Simcoe to Port Dover	9.3	97
25	Q.E.W. to Hwy. 7	22.2	51
52	Hwy. 2 to Hwy. 97	13.9	690
53	Hwy. 20 to Hwy. 2	7.2	846
54	Cayuga to Cainsville	26.9	451
56	Elfrida to Hwy. 3	14.8	88
57	Bismark to Beckett's bridge	8.8	238
58	Port Colborne to Hwy. 8	15.7	89
97	Hwy. 6 to Galt	13.7	.....
99	Dundas to Hwy. 24	16.9	.....
102	Dundas to Hamilton	4.0	.....
401	Freelton to Milton	26.16	143
	TOTALS	604.96	10,587

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63
2, 20	Q.E.W. to Nelson Street, Burlington (Hwy. 2), and from Hwy. 2 to Woodward Avenue on Hwy. 20	4.39	1963	.....	0.30
3	1,000 ft. east of Jct. Hwy. 6, Jarvis	0.10	1962	.....	0.10
6	Jct. Hwy. 6 and College Avenue, Guelph	0.10	1962	.....	0.10
7	West branch, Credit River, Norval	0.48	1962	.....	0.48
8	East end of Q.E.W. interchange to west of St. Davids	2.53	1962	.....	0.30
8	Village of Beamsville	0.32	1962	.....	0.32
20	Approaches to Burlington Canal lift bridge	0.50	1960	0.30	0.20
20	King Street to C.N.R. subway, Stoney Creek	1.75	1961	0.10	1.65
99	Intersection of County Road 32	0.68	1962	.....	0.68
Q.E.W.	North service road, vicinity of Warner Road	0.25	1962	.....	0.25
Q.E.W.	Niagara Falls to Sodom Road	8.16	1961	.....	8.16
Q.E.W.	Hwy. 8 and St. Davids interchange	1.84	1961	0.37	1.47
Q.E.W.	Sodom Road to Fort Erie	8.72	1962	.....	8.72
Q.E.W.	East end of Garden City Skyway to Station 314+50, Q.E.W., including toll plaza	1.99	1962	.....	0.80
403	Chedoke Expressway, Wolfe Island	1.48	1961	1.36	0.12
403	Chedoke Expressway, Main and King Streets	0.23	1961	0.08	0.15
403	York Boulevard	1.65	1962	.....	0.80
403	Freeman interchange westerly	3.10	1962	0.06	3.04
403	Snake Road easterly	2.10	1962	.....	2.00
403	King-Main interchange	1.01	1962	.....	0.20
405	Q.E.W. to just west of Hwy. 8	2.72	1961	0.82	1.90
405	Just west of Hwy. 8 to new Queenston-Lewiston bridge	3.00	1961	1.08	1.92
Development Road					
	Ohsweken southerly and westerly to Brantford and Tuscarora township line	7.03	1962	.....	4.20
	TOTALS	54.13		4.17	37.86



Highway 403—Lemmonville Road structure (Hamilton District).

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63	Tons Placed 1962–63
2, 20	Q.E.W. to Nelson Street, Burlington (Hwy. 2), and from Hwy. 2 to Woodward Avenue on Hwy. 20	4.39	1963	.....	0.30	278
3	1,000 ft. east of Jct. Hwy. 6, Jarvis	0.10	1962	.....	0.10	174
6	Jct. Hwy. 6 and College Avenue, Guelph	0.10	1962	.....	0.10	2,474
7	West branch, Credit River, Norval	0.48	1962	.....	0.48	10,377
8	East end of Q.E.W. interchange to west of St. Davids	2.53	1962	.....	0.30	1,612
8	Village of Beamsville	0.32	1962	.....	0.32	5,421
20	Approaches to Burlington Canal lift bridge	0.50	1960	0.30	0.20	7,600
20	King Street to C.N.R. subway, Stoney Creek	1.75	1961	0.10	1.65	68,075
99	Intersection of Brant County Road 32	0.68	1962	.....	0.68	43,730
Q.E.W.	North service road, vicinity of Warner Road	0.25	1962	.....	0.25	4,218
Q.E.W.	Niagara Falls to Sodom Road	8.16	1961	.....	8.16	196,339
Q.E.W.	Hwy. 8 and St. Davids interchange	1.84	1961	0.37	1.47	105,535
Q.E.W.	Sodom Road to Fort Erie	8.72	1962	..	8.72	100,034
Q.E.W.	East end of Garden City Skyway to Station 314+50, Q.E.W., including toll plaza.	1.99	1962	. ...	0.80	35,814
401	Lots 8 and 9, Con. XI, Twp. of Puslinch, north side of Hwy. 401 service area site	0.60	1962	...	0.60	26,644
401	Lots 8 and 9, Con. XI, Twp. of Puslinch, south side of Hwy. 401 service area site	0.60	1962	. ...	0.60	29,853
403	Chedoke Expressway, Wolfe Island	1.48	1961	1.36	0.12	3,394
403	Chedoke Expressway, Main and King Streets, Hamilton.	0.23	1961	0.08	0.15	8,465
403	York Boulevard, Hamilton	1.65	1962	.....	0.80	2,801
403	Freeman interchange westerly	3.10	1961	0.06	3.04	109,482
403	Snake Road easterly	2.10	1962	.....	2.00	43,003
403	King-Main interchange, Hamilton	1.01	1962	.. ...	0.20	26,744
405	Q.E.W. to just west of Hwy. 8	2.72	1961	0.27	2.45	115,356
405	Just west of Hwy. 8 to new Queenston-Lewiston bridge	3.00	1961	.....	3.00	236,442
Development Road						
	Ohsweken southerly and westerly to Brantford and Tuscarora township line	7.03	1962	.....	4.20	110,797
	TOTALS	55.33		2.54	40.69	1,294,662

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
6	Jct. Hwys. 6 and 401	Patrol	1962	Dec., 1962
8	Jct. Hwys. 5 and 8	Patrol	1963	May, 1963
Q.E.W.	Jct. of Q.E.W. and new Hwy. 8, St. Davids Road.	Patrol	1962	Dec., 1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	4		
Calcium dust layer on gravel roads		3.00	.50
Off-road parks maintained (5 acres)	1		
Roads snowploughed and kept open, King's Highways	23		742
Roadside picnic places maintained	147		
Routine maintenance, King's Highways	23		742
Salt for de-icing roads (raw)		4,702.05	
Salt in sand, stockpiled		10,195.99	
Sand for winter maintenance		84,121.06	
Scale houses maintained	5		
Seeding by department's forces (sq. yds.)	2,797,520		
Shrubs received and planted this year	5,966		
Signs erected or replaced	4,963		
Snow fence erected, dismantled, stored			53.8
Weed control			167.0
Zone painting on King's Highways (gals.)	11,836		1,035

DISTRICT No. 5—OWEN SOUND

H. C. DERNIER, P.Eng., District Engineer

Construction

Grading of Highway 6 from Orchard to Durham was completed. A paving contract was let for this section of highway. Binder course, curb and gutter only was completed.

Grading of Highway 21 from Elsinore to junction of Highways 6 and 21 was completed except for sodding, seeding and trimming.

Channelization and modifying of adjoining service station entrances was carried out at the intersection of Highways 104 and 9.

Small structures were constructed at Holland Centre on Highway 10 and near Allenford on Highway 21.

No new equipment techniques were employed. No unusual difficulties were encountered.

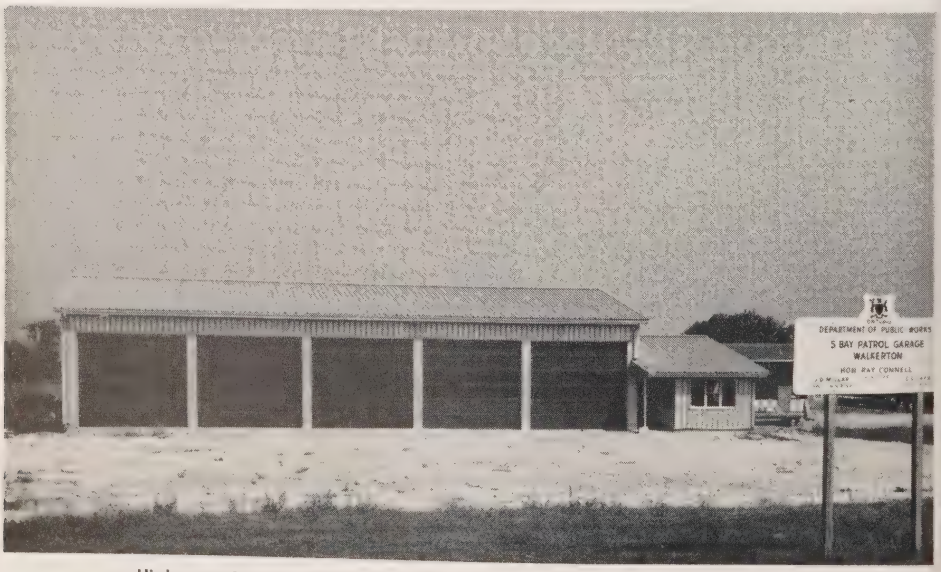
Maintenance

Routine maintenance was carried out as detailed.

Results of priming of gravel roads were better than usual, with resultant reduction of patching.

The use of soil sterilant near guide rails gave satisfactory results.

The district forces carried out work on roadside parks, removed dead trees and replaced culverts as a winter works project. Heavy snowfall interfered seriously with this work, the removal of dead trees in particular. In addition, bridge painting was done by district forces rather than by contract.



Highways 4 and 9—D.H.O. patrol building, Walkerton (Owen Sound District).

Some pre-contract right-of-way fencing was also done by district forces.

Heavier than normal snowfalls accompanied by heavy drifting, particularly adjacent to Lake Huron and Georgian Bay made necessary the use of additional snow blowers. At times four were in operation simultaneously. They included blowers rented to Bruce and Dufferin counties to enable them to open blocked roads.

Use was made of the two-way radio system for controlling weed-spraying and grass-mowing operations, resulting in maximum utilization of equipment. Watering and fertilization of newly planted trees was carried out.

In general no new equipment or techniques were employed.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
6	C.N.R.	Mileage 11.45 Durham Twp., County Grey	1 additional light
6	C.N.R.	Mileage 59.60 Owen Sound Twp., County Grey	2 lights, 1 bell
10	C.P.R.	Mileage 57.77 Owen Sound Twp., County Grey	2 lights, 1 bell
21	C.N.R.	Mileage 51.15 Southampton Twp., County Bruce	2 lights, 1 bell
9, 104	C.P.R.	Mileage 8.09, Lot 30-31, Con. 2, E. Luther Twp., County Dufferin	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
6	Orchard northerly to Durham	5.72	1962	5.72	9,575.00
9, 104	Intersection of Hwys. 9 and 104	0.20	1962	0.20	599.64
	TOTALS	5.92		5.92	10,174.64

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
6	1 mi. north of Wiarton to 14 mi. north of Wiarton	13	38,059	1,179
6	Ferndale Corner to 10 mi. north of Ferndale	10	37,434	900
90	Extension in Barrie (Ferndale Road)	1	3,000	90
91	Duntroon to Stayner	5	16,111	450
	TOTALS	29	94,604	2,619

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
27	From Barrie north limits to Jct. Hwys. 26 and 27	3.3	9,894	440.55

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
10	Hamilton Creek bridge at Holland Centre	1962	1962	Prestressed beams
21	Sauble River bridge, 1 mi. west of Allenford	1962	1962	Structural steel

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
6	Orchard to Durham	5.76	86,724.00
6, 9	D.H.O. yard, Arthur*	.....	4,997.41
9, 104	Intersection Hwys. 9 and 104	0.20	1,237.15
10	Hamilton Creek bridge, south limits, Holland Centre	0.54	6,071.79
21	From Jct. Hwy. 6 west to 5.97 mi., including Sauble River bridge	6.35	55,509.00
10, 24, 89	Cookstown, Shelburne, Flesherton	.....	15,983.41
26	Meaford and Edenvale*	.....	6,999.62
93	Waverly and Hillsdale	.....	6,992.49
	TOTALS	12.85	184,514.87

* Stockpiled.

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
4	Flesherton to Jct. Hwy. 9	40.80	3,522
6	Arthur to Tobermory	118.52	17,229
9	Jct. Hwys. 9 and 104 to Arthur-Kincardine	41.36	93
10	Orangeville to Owen Sound	57.84	213
12	Jct. Hwys. 12 and 27 to Midland	.83	150
21	Jct. Hwys. 9 and 21 to Jct. Hwys. 6 and 21	42.91	346.5
24	Shelburne to Collingwood	31.51	861
26	Barrie to Owen Sound	71.42	1,833
27	Cookstown to Penetang	40.92	7,503
89	Cookstown to Jct. Hwys. 89-10-24	23.01	1,738.5
90	Barrie to Angus	11.38	120
91	Stayner to Duntroon	5.09	3,142.5
92	Elmvale to Wasaga Beach	8.67	.....
93	Craighurst to Jct. Hwys. 93 and 27	17.41	.....
400	Crownhill to Jct. Hwy. 93	9.90	151.5
	TOTALS	521.57	36,903

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63
6	Orchard northerly to Durham	5.76	1961	1.50	4.26
9, 104	Intersection of Hwys. 9 and 104	0.20	1962	.....	0.20
10	Hamilton Creek bridge at south limits of Holland Centre	0.54	1962	.....	0.54
21	From Jct. Hwy. 6 westerly for 6.35 mi. including Sauble River structure 1 mi. south of Allenford	6.35	1962	.....	6.35
	TOTALS	12.85		1.50	11.35

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
6	Orchard northerly to Durham	5.76	1961	4.76	170,700
9, 104	Intersection of Hwys. 9 and 104	0.20	1962	0.20	2,740
10	Hamilton Creek bridge, south limits of Holland Centre	0.54	1962	0.54	21,000
21	From Jct. Hwy. 6 westerly for 6.35 mi. including Sauble River structure 1 mi. south of Allenford	6.35	1962	6.35	218,618
	TOTALS	12.85		11.85	413,058

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
4	South side of highway, west of Durham limits	Patrol garage, office, and tool room	1961	March, 1962
4, 9	North side of highway at west limits of Walkerton	Patrol garage, office, and tool room	1961	March, 1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	8		
Calcium dust layer on gravel roads		108	29
Off-road parks maintained	10		
Roads snowploughed and kept open, King's Highways			534.95
Roadside picnic places maintained	63		
Routine maintenance, King's Highways			534.95
Salt for de-icing roads (raw)		10,830	
Salt in sand, stockpiled		3,320	
Sand for winter maintenance		66,511	
Seeding by department's forces (sq. yds.)	706,640		
Shrubs received and planted this year	3,872		
Signs erected or replaced	2,385		
Snow fence erected, dismantled, stored			164
Weed control (gals.)	424		355
Zone painting on King's Highways (gals.)	6,359		560.3

DISTRICT No. 6—TORONTO

C. FRASER, P.Eng., District Engineer

Construction

The year 1962–63, as far as District 6 is concerned, may be considered the Urban Improvement Year. This year we completed the reconstruction of the highways running through several of the cities, towns and villages in the district, and began the reconstruction of others.

The largest project, which was barely begun, is the widening of Highway 401 to a multilane collector road system through Metropolitan Toronto. The functional plan was completed, and contracts were awarded for grading, paving and a new structure between Avenue Road and Hogg's Hollow, and the widening of the structure over the Canadian National Railway, between Keele and Dufferin Streets.

In addition, the existing bridge over the Hogg's Hollow was lengthened. Bridge construction at Hogg's Hollow posed a severe problem in regard to tight scheduling of contracts. The experience gained will be very useful for future contracts in that area.

Other developments which involved towns and villages were as follows:

Highway 7 to four lanes through Woodbridge: this work consisted of the construction of two structures as well as grading and paving from Hoghway 400 to Highway 27. It was completed in the one construction year.

Highway 10 through Port Credit including the C.N.R. subway. This project was unique for several reasons: Firstly, it was, according to the local historians, first planned in 1922. Secondly, a concrete channel to the Credit River was constructed as part of the overall drainage for the area and thirdly, a railway diversion was made to permit the construction of an underpass.

Work was begun through the village of Markham on the construction of Highway 48.

Work also began on the reconstruction of Highway 50 through Bolton. This included not only widening and realignment of the roadway, but also two new structures, one over the C.N.R. and the other over the Humber River.

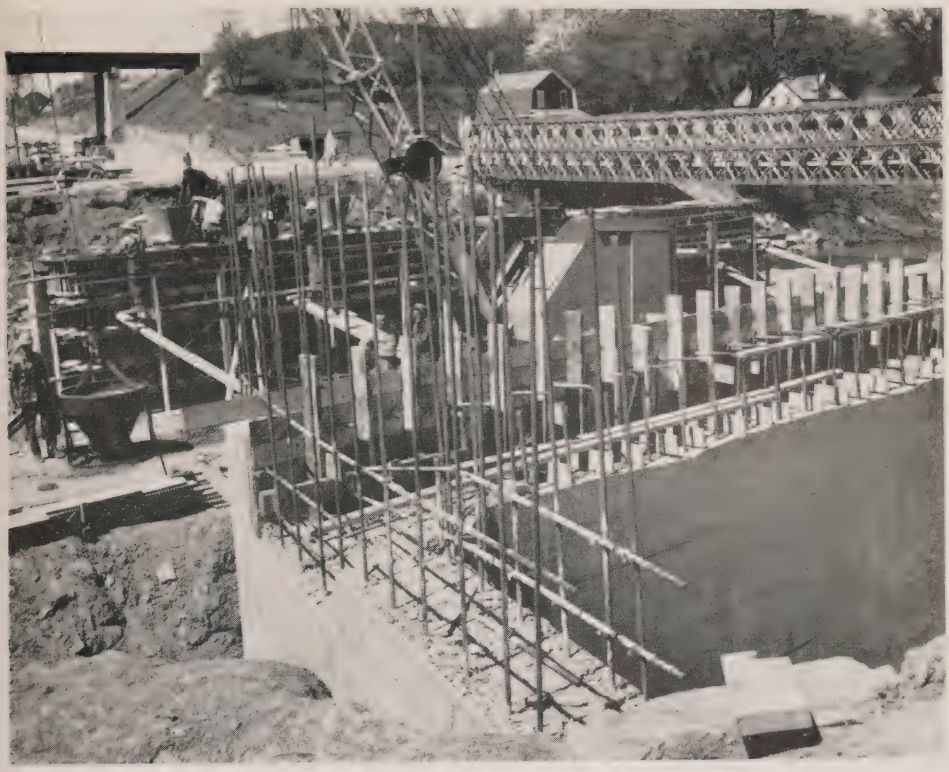
Our Construction Staff was asked to supervise work on the connecting link at Uxbridge. This proved quite successful and the work was completed in the one season.

Regrading and paving through the town of Bradford and on Highway 11, north of Bradford to Fennell's Corners, was started.

Reconstruction of Highway 10 in the Cooksville area was completed.

Highway 5 from Cooksville to Erindale is being rebuilt and widened to four lanes. This project includes building two new structures over the Credit River at Erindale.

Many of these urban projects have been under discussion for some time. Therefore, the actual construction *is* or *was* carried out with a good deal of interest and satisfaction.



Highway 7—Bridge construction at Woodbridge (Toronto District).

In addition to the projects mentioned above, the construction of the collector road interchange at Highway 10 and Queen Elizabeth Way was completed, and was put into operation in September.

In the late winter, construction of the new Malport Road and the reconstruction of Dixon Road to Malton Airport was started. It will be completed for the opening of the new airport in late 1963. Work on structures and sewers was carried out during the winter months.

Maintenance

Summer and winter maintenance were carried out following the patterns established in previous years. A great deal of planning and work has been put into our workmen's safety campaign, with the continued use of special signs and work procedures to protect workmen on our busy highways in the Toronto area.

Some breakup of pavement due to frost action was experienced and some 17,411 tons of hot mix patching was laid in three contracts to correct such damage. Approximately 9.0 miles of Dix-Seal surface treatment was applied to Highway 48, Sutton, southerly. This highway was much improved by the treatment.

Although the winter was no more severe than might be expected, snowfall was experienced almost daily throughout the winter months, requiring night and



Q.E.W.—Overpass at Highway 10, placing pre-stressed beam (Toronto District).

day sanding and chemical application throughout the season. Sand used increased to 105,000 tons on the eight winter sanding contracts in the district and some increase in the use of chemical was also experienced.

Structural steel on three bridges was painted by contract. Bridges throughout the district were inspected and a programme of needed repairs carried out.

A continued programme of landscaping along King's Highways saw the completion of 232 acres of mulch seeding on newly reconstructed roads and the planting of 7,213 shrubs and trees.

Due to the extremely high volumes of traffic on Highway 401 within the Metropolitan Toronto area, and the need for assisting motorists in trouble, and police in clearing accident scenes, arrangements were begun to place a traffic patrol on duty during rush hours. This patrol will commence operation in May 1963.

Some 235 anhydrous tons of calcium chloride and water solutions were placed on shoulders of highways in built-up areas in an effort to control dust. This proved very satisfactory.

Several trial areas of epoxy resin and clean gravel aggregate were applied to worn and weathered concrete pavement and concrete bridges. This form of treatment is a recent development and initial tests are still inconclusive. A further evaluation will be made in 1963 and succeeding years.

A lengthy test section of coloured paving mix (trade name "Whyton") was applied to an area of Highway 401 which has become very rough. The colour of this particular mix closely matches the colour of concrete pavement. The material, while laid in a thin coat only, has been found to be most resistant to reflection cracking over joints in concrete pavement. Evaluations in future years will indicate whether such favourable results can be maintained through the whole life of this material.

Three test strips of thin bituminous hot mix surfacing were also laid on Highway 11. These surfacings were designed to provide a renewal of surface wearing qualities for pavement worn from many years' use and from exposure to the elements.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
400	Hwy. 400, Steeles Avenue	.98	1961	.64	9,005
5	Hwy. 5 and Mississauga Road	1.25	1962	1.25	12,655
7	Hwy. 7 from Jct. Hwy. 400 to Hwy. 27	4.58	1962	4.53	38,653
7, 11	Hwy. 11 (Langstaff), west to Bathurst	3.37	1962	1.67	15,200
48	2.8 mi. north of Hwy. 401	2.80	1961	2.18	22,290
10	Q.E.W. to Cooksville	1.03	1961	.88	8,117
401	Hogg's Hollow viaduct	1.00	1961	.42	4,786
Q.E.W.	Hwy. 10 to Mississauga Road	1.63	1961	1.30	32,627
10	From south end Q.E.W. interchange	.62	1961	.62	6,127
401	Victoria Park Avenue	.35	1962	.35	851
27	Schomberg Road	.20	1962	.20	1,211
400	Finch Avenue	1.16	1962	1.16	5,152
48	3.7 mi. north of Hwy. 401	4.10	1962	.62	3,195
400	5.2 mi. north of Hwy. 88	.34	1962	.24	2,440
50	At Bolton	2.60	1962	.52	2,915
27	Dixon Road, C.N.R. crossing, east and west	2.80	1962	2.80	7,592
10	From 0.6 mi. south Q.E.W. to Hwy. 2	.60	1962	.42	3,720
11	From Jct. Hwy. 88 to Fennell's Corners	6.76	1962	1.69	5,423
Q.E.W.	Q.E.W. and Gardiner Expressway	.17	1962	.17	361
5	Cooksville west to Erindale east limits	3.00	1962	.12	881
11	King sideroad at Oak Ridges	.....	1962	.....	80
401	Sheppard Avenue interchange	.70	1962	.....	634
	TOTALS	40.04		21.78	183,915

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed 1962–63
	Various isolated patching	1,195

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
Q.E.W.	Hwy. 10 to Mississauga Road	2.60	21,752

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Tons Dix-Seal Used 1962–63
48	From Sutton to 8.0 mi. south and from 1.5 to 2.5 mi. north of Ballentrae	9	3,850
Q.E.W., 401	Various isolated locations	34	967
11	Richmond Hill to Newmarket	15	211
	TOTALS	58	5,028

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
400	Hwy. 400, Steeles Avenue, York Twp., north	1961	1962	Reinf. conc., rigid frame
400	Hwy. 400, Lot 3, Con. 5, Vaughan Twp.	1961	1962	Reinf. conc., rigid frame
5	Hwy. 5 and Mississauga Road	1962	1962	Steel beam, reinf. conc.
7	Hwy. 7, Humber River	1962	1962	Steel beam, reinf. conc.
7	Hwy. 7, Plunkett Creek	1962	1962	Reinf. conc., rigid frame
48	2.8 mi. north of Hwy. 401	1961	1962	Reinf. conc., rigid frame
401	Hwy. 401, Hogg's Hollow and Yonge Street cloverleaf	1961	1962	Reinf. conc., steel truss
Q.E.W.	Q.E.W. and Hwy. 10	1961	1962	Reinf. conc. precast, precast deck
400	5.2 mi. north of Hwy. 88	1962	1962	Reinf. conc., rigid frame



Highway 401—Placing new synthetic paving material (Toronto District).

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
Q.E.W.	Hwy. 10 to Mississauga Road	3.26	1961	1.01	10,875

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Sq. Yds. Placed 1962–63
Q.E.W.	Hwy. 10 to Mississauga Road	3.26	1961	1.01	18,652

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
5	Hwy. 5 and Mississauga Road	1.25	124,155
7	Hwy. 7 from Jct. Hwy. 400 to Hwy. 27	4.42	296,369
7, 11	Hwy. 11 (Langstaff), west to Bathurst	1.69	138,395
48	2.8 mi. north of Hwy. 401	1.46	92,723
10	From south end Q.E.W. interchange	.52	37,404
10	Q.E.W. to Cooksville	.05	3,379
401	Hogg's Hollow viaduct	.50	10,935
Q.E.W.	Hwy. 10 to Mississauga Road	.65	81,938
401	Victoria Park Avenue	.35	7,716
27	Schomberg Road	.20	1,951
400	Finch Avenue interchange	1.16	44,603
48	3.7 mi. north of Hwy. 401	3.08	121,207
400	5.2 mi. north of Hwy. 88	.27	46,641
50	Hwy. 50 at Bolton	.62	45,480
27	Dixon Road, C.N.R. crossing, east and west	2.80	76,867
10	From 0.6 mi. south of Q.E.W. to Hwy. 2	.36	53,709
11	From Jct. Hwy. 88 to Fennell's Corners	3.24	209,850
Q.E.W.	Q.E.W. and Gardiner Expressway	.17	2,085
5	Cooksville west to Erindale east limits	.45	24,064
11	King sideroad at Oak Ridges		85
401	Sheppard Avenue interchange	.70	15,930
27	Aurora sideroad	.....	2,495
	TOTALS	23.94	1,437,981

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Tons Placed 1962–63
Var.	Throughout district at various locations	35,438

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
5	Hwy. 5 and Mississauga Road	1.25	1962	1.25
7	Hwy. 7 from Jct. Hwy. 400 to Hwy. 27	4.58	1962	4.42
7, 11	Hwy. 11 (Langstaff), west to Bathurst	3.37	1962	1.69
48	2.8 mi. north of Hwy. 401	2.80	1961	1.46
10	Q.E.W. to Cooksville	1.03	1961	.05
401	Hogg's Hollow viaduct	1.00	1961	.50
Q.E.W.	Hwy. 10 to Mississauga Road	1.63	1961	.65
10	From south end Q.E.W. interchange	.62	1961	.52

Grading and Culverts (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962-63
401	Victoria Park Avenue	.35	1962	.35
27	Schomberg Road	.20	1962	.20
400	Finch Avenue interchange	1.16	1962	1.16
48	3.7 mi. north of Hwy. 401	4.10	1962	3.08
400	5.2 mi. north of Hwy. 88	.34	1962	.27
50	Hwy. 50 at Bolton	2.60	1962	.62
27	Dixon Road, C.N.R. crossing, east and west	2.80	1962	2.80
10	From 0.6 mi. south of Q.E.W. to Hwy. 2	.60	1962	.36
11	From Jct. Hwy. 88 to Fennell's Corners	6.76	1962	3.24
Q.E.W.	Q.E.W. and Gardiner Expressway	.17	1962	.17
5	Cooksville west to Erindale east limits	3.00	1962	.45
11	King sideroad at Oak Ridges	.....	1962	.....
401	Sheppard Avenue interchange	.70	1962	.70
27	Aurora sideroad	.....	1962	.....
	TOTALS	39.06		23.94

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
5	Hwy. 5 and Mississauga Road	1.25	1962	1.25	119,985
7	Hwy. 7 from Jct. Hwy. 400 to Hwy. 27	4.58	1962	4.42	273,024
7, 11	Hwy. 11 (Langstaff), west to Bathurst	3.37	1962	1.69	138,395
48	2.8 mi. north of Hwy. 401	2.80	1961	1.46	91,991
10	Q.E.W. to Cooksville	1.03	1961	.05	1,854
401	Hogg's Hollow viaduct	1.00	1961	.50	10,080
Q.E.W.	Hwy. 10 to Mississauga Road	1.63	1961	.65	81,496
10	From south end Q.E.W. interchange	.62	1961	.52	36,595
401	Victoria Park Avenue	.35	1962	.35	7,066
27	Schomberg Road	.20	1962	.20	1,494
400	Finch Avenue interchange	1.16	1962	1.16	41,320
48	3.7 mi. north of Hwy. 401	4.10	1962	3.08	121,207
400	5.2 mi. north of Hwy. 88	.34	1962	.27	45,610
50	Hwy. 50 at Bolton	2.60	1962	.62	45,480
27	Dixon Road, C.N.R. crossing, east and west	2.80	1962	2.80	72,251
10	From 0.6 mi. south of Q.E.W. to Hwy. 2	.60	1962	.36	53,679
11	From Jct. Hwy. 88 to Fennell's Corners	6.76	1962	3.24	206,932
Q.E.W.	Q.E.W. and Gardiner Expressway	.17	1962	.17	1,870
5	Cooksville, west to Erindale east limits	3.00	1962	.45	24,064
401	Sheppard Avenue interchange	.70	1962	.70	15,203
27	Aurora sideroad	.....	1962	.....	2,210
	TOTALS	39.06		23.94	1,391,806

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
	Downsview	2 portable maintenance sheds	1961	1962
48	.....	Portable field office, replacement	1962	1962
	Steels Avenue	Portable field office, replacement	1962	1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	3		
Roads snowploughed and kept open, King's Highways			777
Roadside picnic places maintained	4		
Routine maintenance, King's Highways			777
Salt for de-icing roads (raw)		25,200	
Salt in sand, stockpiled		6,700	
Sand for winter maintenance		103,900	
Scale houses maintained	6		
Seeding by department's forces (sq. yds.)	1,122,880		
Shrubs received and planted this year	7,213		
Signs erected or replaced	6,118		
Snow fence erected, dismantled, stored			80
Traffic lights installed this year	22		
Weed control			1,124
Zone painting on King's Highways (gals.)	20,800		

DISTRICT No. 7—PORT HOPE

F. B. WHITELEY, P.Eng., District Engineer

Construction

The elimination of level crossings on Highway 401 continued this fiscal year. Work completed included interchanges at Courtice and Waverley Roads, underpass at Holt Road and connecting service roads, permitting controlled access to Highway 401. The location of this work lies between Oshawa and Bowmanville.

For the convenience of motorists travelling on Highway 401, service centres were opened in the district. Four centres were graded and paved and buildings erected between Newcastle and Trenton.

On Highway 45 through Asphodel and Percy Townships, paving of 7.5 miles from Norwood to Hastings was completed. Work also included improvement of surface drainage through the village of Hastings.

From the town of Port Perry, the reconstruction of Highway 7A continued easterly through Manvers Township. This fiscal year saw the completion of four miles of grading, with 3.5 miles west of this nearing completion.

On Highway 12, construction work was awarded on 4.6 miles. This work stretches from the village of Blackwater through the village of Sunderland northerly to the junction of Highway 7 west of Lindsay. At this point a new channelization will be constructed.

In the county of Prince Edward, 7.5 miles of paving was completed on Highway 14. The location is northerly from the village of Bloomfield through Hallowell and Sophiasburg Townships. Also in Prince Edward County, grading commenced on 7.6 miles of Highway 33 from Hillier to Consecon. Work included a new structure over the Consecon River and 1.6 miles of old highway reconstruction.

North of Lindsay, on Highway 35, was begun a new channelization at the junction of Highway 121 to Fenelon Falls and the construction of a new 600-foot high-level structure over the Trent Canal at Rosedale.

Maintenance

During the year development of a new patrol site and construction of a four-bay patrol garage and a standard salt shed was completed at Roseneath.

The construction of a new bridge attendant's office was completed at Belleville Bay bridge.

Four crushed gravel contracts for shouldering were carried out.

Two miles of hot mix patching was completed and 6.5 miles of resurfacing with Dix-Seal was completed, with very satisfactory results. Paving of three winter sand stockpiling areas was carried out with a view to reducing the possibility of soil contamination.

In addition to the normal maintenance of grass cutting, garbage collection, guide rail and shoulder repairs, bituminous prime on gravel roads of 50.8 miles was carried out; also surface treatment, on various highways, 24 miles in all.

Day labour mulch of 3.5 miles was completed.



Highway 401—Interchange construction near Bowmanville (Port Hope District).

Grass seeding carried out by district forces amounted to 1,442,320 square yards and planting of 9,051 various types of shrubs and trees. Removal of dead and dangerous trees on various highways was done as a winter works program; also the construction of picnic sites at the service centres on Highway No. 401 and brush clearing on secondary highways.

Day labour road construction was carried out as a winter works project.

Installation of two additional traffic signals at Belleville Bay bridge and two installations of flashing stop signs was carried out in the district.

Pre-marking to the new standards and zone painting was completed on 727.95 miles of King's Highways.

The district paint shop carried out the erection and replacing of 3,423 signs.

A new tractor trailer power sander supplied by the Equipment Branch was used on winter maintenance with satisfactory results.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
46	C.N.R.	Crossing at Lorneville	2 flash. signals, 1 bell
45	C.N.R.	Crossing in village of Hastings	1 flash. signal, 1 bell, replacing existing wig-wag signals
7	C.P.R.	Crossing 3.4 mi. east of Havelock	2 flash. signals, 1 bell
33	C.N.R.	Crossing at Consecon, Prince Edward County	2 flash. signals, 1 bell
12	C.P.R.	Crossing at Myrtle	2 flash. signals, 1 bell, replacing existing wig-wag signals
30	C.P.R.	Crossing in Havelock	2 flash. signals, 1 bell, replacing existing protection
12	C.N.R.	Crossing at Brechin	2 flash. signals

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
401	Service road, Twp. of Darlington, Lot line 13 and 14 to Lot 31	4.61	1961	4.40	24,074.71
401	County of Durham, north side Hwy. 401, Lots 18, 19, 20, Con. 1, Twp. of Clarke	0.51	1962	0.51	1,421.57
401	County of Durham, south side Hwy. 401, Lots 31 and 32, Con. 2, Twp. of Hope	0.51	1962	0.51	1,891.74
401	County Northumberland, north side Hwy. 401, Lots 16 and 17, Con. 2, Twp. of Murray	0.60	1962	0.60	1,556.75
401	County Northumberland, south side Hwy. 401, Lots 16 and 17, Con. 2, Twp. of Murray	0.60	1962	0.60	1,608.31
45	Norwood southerly	7.36	1962	7.36	26,461.44
14	Crofton to Bloomfield	7.49	1962	7.49	23,896.54
7, 12	Greenbank to Blackwater	6.26	1961	0.16	427.89
7A	Caesarea sideroad to Port Perry and Port Perry Village (Queen and Water Sts.)	9.91	1961	6.00	7,200.94
	TOTALS	37.85		27.63	88,539.89

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1962–63	Tons Placed 1962–63
503	From 5 mi. north of Kirkfield to 8.5 mi. north — 3.5 mi.	3.5	3.5	5,775

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
36	Nogie's Creek Post Office to Buckhorn Road (various locations)	9.0	25,939	1,008
503	Uphill easterly 8.7 mi.	8.7	23,354	588
503	Sebright southerly 11.1 mi.	11.1	29,797	1,407
505	Uphill to Victoria Road	10.5	35,668	882
507	Hwy. 36 to 12.5 mi. north (various sections)	10.5	13,218	798
	Burnt River	1.0	1,259	74
	TOTALS	50.8	129,235	4,757

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
2	Cobourg to Colbourne	15.0	1,997.27
46	Kirkfield south 6.5 mi.	6.5	2,562.65
	TOTALS	21.5	4,559.92

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
35	Jct. Hwys. 35 and 46 to Haliburton-Victoria County boundary	8.6	25,373	1,351
36	Jct. Hwys. 36 and 28 to Buckhorn road	8.5	25,077	1,335
503	Jct. Secondary Hwys. 503 and 505 westerly 4.3 mi.	4.3	12,686	675
old 35	Village of Pontypool	0.8	2,360	126
old 121	Jct. Hwy. 121 to village of Burnt River	1.8	5,311	283
	TOTALS	24.0	70,807	3,770

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	4.0 mi. west of west limits, Bowmanville, Darlington Twp.	1961	1962	Concrete, rigid frame (slab)
401	0.20 mi. west of west limits, Bowmanville, Darlington Twp. Bridge No. 12	1961	1962	Concrete, prestressed girders
401	2.0 miles west of west limits, Bowmanville, Darlington Twp. Bridge No. 8	1961	1962	Concrete, prestressed girders
33	Consecon	1962	No	Concrete, rigid frame (slab)
35	Rosedale	1962	No	Reinforced concrete and steel beam girder

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
401	Courtice Road interchange, Hold Road structure, Waverly Road interchange and service road westerly from Lots 13–14 to Lot 31, Twp. of Darlington	2.61	49,057.10 12,019.28
401	Lots 18, 19 and 20, Con. I, Twp. of Clarke, County of Durham, north side of Hwy. 401	0.51	4,799.94
401	Lots 31 and 32, Con. II, Twp. of Hope, County of Durham, south side Hwy. 401	0.51	13,834.84
401	Lots 16 and 17, Con. II, Twp. of Murray, County of Northumberland, north side Hwy. 401	0.60	6,456.66
401	Lots 16 and 17, Con. II, Twp. of Murray, County of Northumberland, south side Hwy. 401	0.60	6,571.00 49,223.25
45	Norwood southerly	7.36	4,347.10 12,671.31
35, 121	Intersection at Powles Corners	0.75	7,369.00
33	Hillier northerly including Consecon By-pass and 1.6 mi. of old Hwy. 33 from Picton County Road to Consecon By-pass including structure at Consecon River bridge in Consecon	3.44	94,174.00
14	Bloomfield to Crofton	7.49	6,077.16 14,457.93
7A	From Hwy. 35 westerly for 4.38 mi.	4.38	33,364.33 6,838.02
7A	From Caesarea easterly 3.46 mi.	2.08	22,207.00
7A	Caesarea side road to Port Perry and Port Perry Village (Queen and Water Sts.)	9.91	85.84 2,802.38
	Totals	40.24	346,446.15

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
46	Patrol 13, section E, Jct. Hwys. 46-35 to Jct. Hwys. 46–505	10.10	80.0
503	Patrol 12, section C, Jct. Hwys. 46-503 to Jct. Hwys. 503-505	16.38	1,619.5
503	Patrol 13, section F, Jct. Hwys. 503-515 to Jct. Hwys. 503-35	10.38	120.0
505	Patrol 12, section D, Jct. Hwys. 46-505 to Jct. Hwys. 505-503	11.00	84.8
	Totals	47.86	1,904.3



Highway 33—Bridge demolition, Prince Edward County (Port Hope District).

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1962–63
401	Courtice Road interchange, Holt Road structure, Waverley Road interchange and service road westerly from Lots 13-14 to Lot 31, Twp. of Darlington	4.61	1961	3.61	1.00
401	Lots 18, 19 and 20, Con. I, Twp. of Clarke, County of Durham, north side Hwy. 401.	0.51	1962	.....	0.51
401	Lots 31 and 32, Con. II, Twp. of Hope, County of Durham, south side Hwy. 401.	0.51	1962	.....	0.51
401	Lots 16 and 17, Con. II, Twp. of Murray, County of Northumberland, north side Hwy. 401	0.60	1962	.....	0.60
401	Lots 16 and 17, Con. II, Twp. of Murray, County of Northumberland, south side Hwy. 401	0.60	1962	.....	0.60
33	Hillier northerly including Consecon By-pass and 1.6 mi. of old Hwy. 33 from Picton county road to Consecon By-pass including structure at Consecon River bridge in Consecon	7.65	1962	.....	3.44
35, 121	Intersection at Powles Corners	1.0	1962	.....	0.75
7A	From Hwy. 35 westerly 4.38 mi.	4.38	1962	0.38	4.00
7A	From Caesarea easterly 3.46 mi.	3.46	1962	.....	2.08
35	Trent Canal at Rosedale	0.86	1962	.....	0.35
	TOTALS	24.18		3.99	13.84

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
401	Courtice Road interchange, Holt Road structure, Waverley Road interchange and service road westerly from Lots 13-14 to Lot 31, Twp. of Darlington	4.61	1961	2.61	122,620.66
401	Lots 18, 19 and 20, Con. I, Twp. of Clarke, County of Durham, north side Hwy. 401.	0.51	1962	0.51	89,096.47
401	Lots 31 and 32, Con. II, Twp. of Hope, County of Durham, south side Hwy. 401.	0.51	1962	0.51	32,747.70
401	Lots 16 and 17, Con. II, Twp. of Murray, County of Northumberland, north side Hwy. 401	0.60	1962	0.50	26,567.50
401	Lots 16 and 17, Con. II, Twp. of Murray, County of Northumberland, south side Hwy. 401	0.60	1962	0.60	28,815.70
45	Norwood southerly	7.36	1962	7.36	931.44
35, 121	Intersection at Powles Corners	1.00	1962	0.75	20,447.00
35	Trent Canal bridge at Rosedale	0.86	1962	0.35	8,942.76
33	Hillier northerly including Consecon By-pass and 1.6 mi. of old Hwy. 33 from Picton county road to Consecon By-pass including structure at Consecon River bridge in Consecon	7.65	1962	3.06	.....
7A	From Hwy. 35 westerly 4.38 mi	4.38	1962	4.38	82,967.83
7A	From Caesarea easterly 3.46 mi	3.46	1962	2.08	89,654.00
	TOTALS	31.54		22.81	502,791.06

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
45	Department of Highways patrol yard, 3 mi. north of Roseneath	Salt shed	Aug., 1962	Oct., 1962
45	3 mi. north of Roseneath	Patrol garage	Nov., 1962	April, 1963
14	Rossmore	Bridge attendants' office	Mar., 1962	April, 1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	25	32
Off-road parks maintained	14	.....	.....
Roads snowploughed and kept open, King's Highways	22	.....	735.44
Roads snowploughed and kept open, Secondary Highways	4	.....	84.89
Roadside picnic places maintained	78	.....	.....
Routine maintenance, King's Highways	.....	.....	735.44
Routine maintenance, Secondary Highways	.....	.....	84.89
Salt for de-icing roads (raw)	.....	11,381	.....
Salt in sand, stockpiled		4,346	
Sand for winter maintenance		112,514	
Scale houses maintained	1		
Seeding by department's forces (sq. yds.)	1,442,320	.....	.....
Shrubs received and planted this year	9,051	.....	.....
Signs erected or replaced	3,423	.....	.....
Snow fence erected, dismantled, stored	.....	.....	84.04
Traffic lights installed this year	2	.....	.....
Weed control			323.48
Zone painting on King's Highways (gals.)	8,990	.....	727.95
Zone painting on Secondary Highways (gals.)	110.50	.....	13.58

DISTRICT No. 8—KINGSTON

E. A. CASH, P.Eng., District Engineer

Construction

Concrete paving was placed on the south lane of Highway 401 from Odessa west to 1.5 miles east of Napanee. In the fall of 1962, 14 miles of highway and 12 structures were opened to traffic. Pre-stressed concrete beam structures were completed over Highway 401 at Wallbridge Road and Sydney Street, Belleville. Grading on the north lane and concrete paving on both north and south lanes was completed on 2.65 miles of Highway 401 west of Highway 16. An improved channelization was also completed on Highway 401 at the entrance to the Thousand Islands bridge and at the Mallorytown landing park. These channelizations relieved congestion of heavy tourist traffic.

On Highway 2, a channelization was constructed at the Rocky Road intersection which improved the main entrance to a large industrial plant.

Hot mix paving on Highway 15 from Seeley's Bay to Morton was completed with improved intersections.

Grading was commenced on Highway 42 from Smiths Falls to Port Elmsley. This work includes a large muskeg excavation and causeway over the Rideau Basin.

Grading of Highway 7 from Kaladar easterly for 8.56 miles was completed, bringing this portion of road up to Trans-Canada standards. The first lift of hot mix paving was also placed on this portion of road.



Highway 401—Marysville Creek structure (Kingston District).

On Highway 502 from Napanee to Marysville, shoulder widening and resurfacing was completed. This work corrected the narrow shoulder and slippery pavement conditions.

Maintenance

With the opening to traffic in 1962 of 14 miles of Highway 401 from Odessa to Napanee and the planned opening in 1963 of the remaining section from Napanee to Marysville, construction was started on an eight-bay patrol garage and office. This building, located between Odessa and Napanee, will serve two patrols covering a large section of Highway 401.

A new scale house was constructed in 1962 on Highway 401, 1.25 miles east of Prescott and three other scales were maintained for the Department of Transport.

The ferry service connecting Highway 33, from Adolphustown to Glenora, handled a total of 247,465 vehicles in 1962–1963, of which 41,048 were transported in the peak month of August. To provide a better service the air-bubbling system installed in 1961-1962 for ice control at Adolphustown, was improved and duplicated at the Glenora slip.

To furnish adequate rest sites for the travelling public, a total of 69 roadside picnic areas and off-road parks were maintained in 1962.

With the application of more than 10,000 gallons of paint to the pavements, the erection of 3,420 signs, the installation of three new traffic light systems, and the completion of automatic signals at three railway crossings, the traffic controls were improved, assuring a safer highway system.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
38	C.P.R.	Mileage 77.27, Lot 8, Con. XII, Kingston subdivision	2 lights, 1 bell
42	C.N.R.	Mileage 54.35, Smiths Falls subdivision	2 lights, 1 bell
7	C.P.R.	Mileage 46.57, Havelock subdivision	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
401	Camden East road to Millhaven Creek	5.60	1961	0.78	1,624
401	Napanee easterly, 4.9 mi.	4.90	1961	0.70	977
401	Prescott interchange to Hwy. 16	2.65	1962	2.65	1,569
401	West of Marysville to County Road 15	4.36	1962	4.36	1,019
401	Interchange at county road to Wallbridge	0.57	1961	0.29	5,271
401	Odessa to Napanee (interchanges)	12.35	1961	3.30	13,022
401	Sidney Street underpass	0.44	1962	0.44	828
401	Interchange, Ivy Lea Village road and Hwy. 401	0.13	1962	0.13	312
401, 2	Wymans sideroad underpass and revision to Hwy. 2 at Milltown	0.69	1962	0.69	2,408
401	West of Marysville easterly to Napanee (interchanges)	10.00	1962	0.90	964
401	Intersection Hwy. 401 — National Park entrance and County Road 5	0.30	1962	0.30	1,155
401	Weigh scales and approaches, 1.25 mi. east of Prescott	0.45	1962	0.45	418
401	Channelization of Ivy Lea Bridge road and Hwy. 401	0.79	1962	0.79	1,439

Bituminous Hot Mix Pavement (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
2	Intersection Rocky Road and Hwy. 2, 1.2 mi. east of Maitland	0.63	1962	0.63	2,729
2	Curve easement, 2 mi. east of Jct. Hwy. 15.	0.34	1962	0.34	1,134
2	Improvement County Road 5, east end of Napanee	0.11	1962	0.11	109
2	Vicinity Vimy Barracks	0.80	1962	0.80	72
7	Kaladar easterly, 8.84 mi. (Base only)	8.84	1962	4.50	10,624
7	Sharbot Creek westerly, 9.84 mi. (Top only)	9.84	1961	9.84	24,084
33	Kingston to Collins Creek (Patching)	3.67	1961	.....	392
33	Fairfield diversion to west of Collins Bay..	0.90	1962	0.90	3,776
	TOTALS	68.36		32.90	73,926

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1962–63	Tons Placed 1962–63
2	Jct. Hwy. 16 to Crystal Beach interchange	14.48	14.48	6
401	Crystal Beach interchange to Development Road 137.	15.50	15.50	.....
2	Crystal Beach interchange to interchange 401, Gananoque east	23.70	23.70	4
137	Hwy. 401 to International Boundary	1.35	1.35	8
2	Gananoque west limits to Kingston east limits	16.08	16.08	10
15	Jct. Hwy. 2 to Frontenac-Leeds county line	15.50	15.50	6
15	Frontenac-Leeds county line to Jct. Hwy. 42	16.06	16.06	.....
32	Gananoque north limits to Jct. Hwy. 15	11.03	11.03	4
42	Jct. Hwy. 15 to Westport, south limits	8.23	8.23	8
2	Kingston west limits to Bridge Street, Napanee	20.73	20.73	75
38	Jct. Hwy. 2 to Kingston, Portland township line	10.10	10.10	30
2	Napanee west limits to Trenton east limits	35.25	35.25	75
41	Napanee to Jct. Hwy. 7	31.67	31.67	142
38	Kingston-Portland Twp. to Jct. Hwy. 7	35.12	35.12	63
15	Jct. Hwy. 42, Crosby to Smiths Falls south limits	19.63	19.63	15
42	Delta west limits to Jct. Hwy. 15	8.10	8.10	12
29	Brockville north limits to Smiths Falls south limits	28.93	28.93	74
42	Jct. Hwy. 29 to Delta west limits	16.74	16.74	79
7	Jct. Hwy. 41 to Jct. Hwy. 37	13.00	13.00	22
7	Jct. Hwy. 37 to Jct. Hwy. 14	19.25	19.25	36
7	Jct. Hwy. 43 to Jct. Hwy. 509	23.08	23.08	18
43	Smiths Falls northwest limits to Jct. Hwy. 7	11.48	11.48	90
7	Jct. Hwy. 509 to Jct. Hwy. 41	24.95	24.95	50
33	Kingston west limits to Glenora ferry dock	30.80	30.80	75
95	Horne's Point to Jct. Hwy. 96	7.19	7.19	96
96	Quebec Head to west end, Con. II	19.90	19.90	109
37	Jct. Hwy. 401 to Jct. Hwy. 7	27.50	27.50	151
14	Jct. Hwy. 401 to Marmora south limits	26.63	26.63	50
33	Trenton north limits to Stirling south limits	14.88	14.88	45
401	Camden Road to Hwy. 502	16.03	16.03	25
401	Hwy. 15 to Hwy. 38	7.44	7.44	6
401	Hwy. 38 to Camden Road	14.25	14.25	.....
401	Jct. Hwy. 137 to Jct. Hwy. 2, Gananoque east	8.54	8.54	5
401	Jct. Hwy. 2, Gananoque to Jct. Hwy. 15	18.59	18.59	20
401	Jct. Hwy. 16 to Crystal Beach interchange	26.97	26.97	6
	SUBTOTAL	638.68	638.68	1,415
Secondary Roads				
502	Bridge Street, Napanee to Jct. Hwy. 2, Marysville	7.32	7.32	12
509	Jct. Hwy. 7 to Snow Road	12.06	12.06	16
	SUBTOTAL	19.38	19.38	28
	TOTALS	658.06	658.06	1,443

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
401	Weigh scales at Prescott	.....	10
7 T.C.	Kaladar easterly, including Arden sideroad and commercial entrances	8.84	287
17 T.C.	Weigh scales at Glen Tay		18
37	Tweed southerly	10.05	17,042
2-7-14-33-37	Various locations	93.00	5,730
2-15-38-43-401	Various locations	143.00	6,485
	SUBTOTAL	254.89	29,572
Secondary Road			
502	Napanee to Marysville	7.32	13,800
	TOTALS	262.21	43,372

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Ernestown Twp. bridge No. 9, "Twins"	1961	1962	Rigid frame
401	South service road bridge	1961	1962	Rigid frame
401	Ernestown Twp. bridge No. 12	1961	1962	Concrete box girder
401	Ernestown Twp. bridge, "Twins"	1961	1962	Rigid frame
401	Tyendinaga Twp. bridge No. 9	1961	1962	Concrete box girder
401	Leg "C", County Road No. 15	1961	1962	Rigid frame
401	Marysville Creek	1961	1962	Barrell arch
401	Wallbridge Road bridge at Hwy. 401 interchange	1961	1962	Prestressed beam
401	Switzerville Road, structure at Hwy. 401	1961	1962	Concrete, boat type
401	Sidney Street underpass, Sidney-Thurlow township line	1961	1962	Prestressed girder
401	Wyman's sideroad underpass, west of Marysville	1961	.....	Prestressed beam
2	Kayler's Creek bridge	1962	.....	Prestressed beam
41	Selby diversion	1962	1962	Rigid frame
401	Fredericksburgh North Twp., Palace Road.	1961	1962	Steel girder

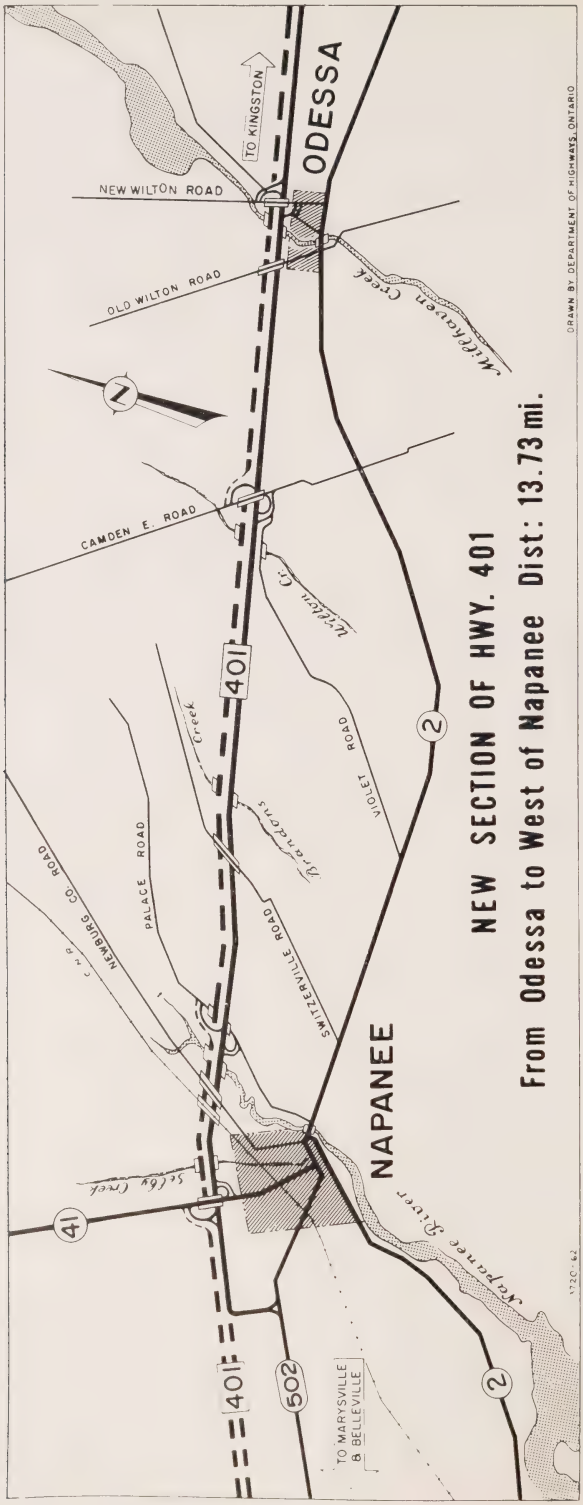
Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63	Pave Width
401	Odessa to Napanee*	12.35	1962	0.16	453	10 Ft.
401	2 mi. west of Marysville, easterly to Napanee*	10.00	1962	0.03	35	10 Ft.
	TOTALS	22.35		0.19	488	

* Acceleration and de-acceleration lane.

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Sq. Yds. Placed 1962–63	Pave. Width
401	Prescott interchange to Hwy. 16 (Dual lane)	2.65	1962	2.65	73,197	24 Ft.
401	Odessa to Napanee (south lane)	12.35	1962	12.35	172,957	24 Ft.
401	2 mi. west of Marysville, easterly to Napanee (south lane)	10.00	1962	1.50	22,880	24 Ft.
	TOTALS	25.00		16.50	269,034	


NEW SECTION OF HWY. 401
From Odessa to West of Napanee Dist: 13.73 mi.
ODESSA
NAPANEE
TO KINGSTON
NEW WILTON ROAD
OLD WILTON ROAD
CAMDEN E. ROAD
VIOLET ROAD
PALACE ROAD
SWITZERVILLE ROAD
NEWBURG RD.
TO MARYSVILLE & BELLEVILLE
401
41
502
2
1
Napanee River
Salmon River
Millhaven Creek
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
401	Prescott interchange to Hwy. 16	2.65	28,299
401	West of Marysville to County Road 15	4.36	159
401	Interchange at county road to Wallbridge	0.57	3,597
401	Odessa to Napanee	12.35	27,370
401	2 mi. west of Marysville, easterly to Napanee	10.00	2,845
2	Intersection Rocky Road and Hwy. 2 to 1.2 mi. east of Maitland	0.63	1,772
7 T.C.	Kaladar easterly 8.56 mi.	8.56	9,198
7 T.C.	Kaladar easterly to Arden sideroad	8.84	3,039
7 T.C.	Sharbot Creek westerly	9.84	19,798
33	Kingston to Collins Creek (shoulders)	3.67	244
33	Fairfield diversion 2.7 mi. west, Collins Bay	0.90	2,036
37	Tweed southerly 10.05 mi.	10.05	21,023
41	Selby diversion	1.17	1,754
2	Curve easement 2 mi. east of Jct. Hwy. 15	0.34	393
2	D.H.O. quarry east of Napanee (stockpile)	.....	9,994
2	D.H.O. yard 5 mi. west of Brockville (stockpile)	.....	4,995
14	D.H.O. yard 0.5 mi. north of Stirling (stockpile)	.....	8,001
	TOTALS	73.93	144,517

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
2	Jct. Hwy. 16 to Crystal Beach interchange	17.18	320
401	Crystal Beach interchange to Development Road 137 and 401	15.50	200
2	Crystal Beach interchange to interchange 401, Gananoque east	23.70	382
137	Hwy. 401 to International Boundary	1.35	75
15	Frontenac-Leeds county line to Jct. Hwy. 42	16.06	420
32	Gananoque north limits to Jct. Hwy. 15	11.03	330
42	Jct. Hwy. 15 to Westport South, west limits	8.23	240
2	Kingston west limits to Bridge Street, Napanee	20.73	6,000
38	Jct. Hwy. 2 to Kingston-Portland township line	10.12	184
2	Napanee west limits to Trenton east limits	35.25	504
38	Kingston-Portland township line to Jct. Hwy. 7	35.12	1,477
15	Jct. Hwy. 42 to Smiths Falls south limits	19.63	700
42	Delta west limits to Jct. Hwy. 15	8.10	200
29	Brockville north limits to Smiths Falls south limits	28.93	308
42	Jct. Hwy. 29 to Delta west limits	16.74	130
7	Jct. Hwy. 41 to Jct. Hwy. 37	13.00	526
7	Jct. Hwy. 37 to Jct. Hwy. 14	19.25	800
7	Jct. Hwy. 43 to Jct. Hwy. 509	23.08	719
43	Smiths Falls northwest limits to Jct. Hwy. 7	11.48	400
95	Horne's Point to Jct. Hwy. 96	7.19	583
96	Quebec Head to west end, Con. II	19.90	900
37	Jct. Hwy. 401 to Jct. Hwy. 7	27.50	565
14	Jct. Hwy. 401 to Marmora south limits	26.63	500
33	Trenton north limits to Stirling south limits	14.88	330
401	Drummey's side road to Jct. Hwy. 33	28.26	400
401	Hwy. 15 to Hwy. 38	7.44	60
401	Hwy. 38 to Camden Road	14.25	90
401	Jct. Hwy. 137 to Jct. Hwy. 2 east of Gananoque	8.54	350
401	Jct. Hwy. 2, Gananoque to Jct. Hwy. 15	18.59	419
401	Jct. Hwy. 16 to Crystal Beach interchange	26.97	621
	SUBTOTALS	534.63	18,733
Secondary Road			
502	Bridge Street, Napanee, to Jct. Hwy. 2, Marysville	7.32	1.5
	SUBTOTALS	7.32	1.5
	TOTALS	541.95	18,734.5

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
401	Camden East Road to Millhaven Creek	5.6	1961	0.80
401	Napanee easterly 4.9 mi.	4.9	1961	0.70
401	Prescott interchange to Hwy. 16	2.65	1962	2.65
401	Tyendinaga township line easterly	3.94	1961	2.76
401	West of Marysville to County Road 15	4.36	1961	0.44
401	Interchange at county road to Wallbridge	0.57	1961	0.29
401	Interchange, Ivy Lea Village Road and Hwy. 401	0.13	1962	0.13
401	Channelization at Ivy Lea Bridge Road	0.79	1962	0.79
401	Wyman's Side Road and revision to Hwy. 2 at Milltown	0.69	1962	0.69
401	Intersection 401, National Park entrance and County Road 5, Mallorytown	0.30	1962	0.30
2	Curve easement 2 mi. east of Jct. Hwy. 15	0.34	1962	0.34
2	Kylers Creek bridge	0.49	1962	0.10
2	Improvement County Road 5, Jct. Hwy. 2, east end, Napanee	0.11	1962	0.11
2	Intersection Rocky Road and Hwy. 2, 1.2 mi. east of Maitland	0.63	1962	0.63
33	Fairfield diversion	0.90	1962	0.90
41	Selby diversion	1.17	1962	1.17
43	Smiths Falls west limits, westerly to east limits, Port Elmsley	4.94	1962	0.20
	Service road at Hwy. 38 interchange	0.53	1962	0.53
7 T.C.	Kaladar easterly 8.56 mi.	8.56	1962	8.56
	SUBTOTALS	41.60		22.09
Secondary Road				
509	Mississippi to Snow Road	0.50	1962	0.50
	TOTALS	42.10		22.59

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
401	C.N.R., Napanee to Con. 3, Richmond Twp. (shoulders)	2.26	1961	2.26	687
401	Camden East Road to Millhaven Creek	5.60	1961	0.78	8,065
401	Napanee easterly 4.9 mi.	4.90	1961	0.70	32
401	Prescott interchange to Hwy. 16	2.65	1962	2.65	12,867
401	Tyendinaga east to road allowance, Lots 15 and 16	3.94	1961	1.67	124
401	West of Marysville to County Road 15	4.36	1962	4.36	3,534
401	Interchange at county road to Wallbridge Road and Hwy. 401	0.57	1961	0.29	18,814
401	Odessa to Napanee (south lane)	12.35	1962	12.35	342,172
401	Sidney Street underpass	0.44	1962	0.44	6,642
401	Channelization at Ivy Lea Bridge Road and Hwy. 401	0.79	1962	0.79	2,588
401, 2	Wyman's side road underpass and reversion to Hwy. 2 at Milltown	0.69	1962	0.69	10,741
401	Intersection 401, National Park entrance and county road at Mallorytown	0.30	1962	0.30	2,357
401	2 mi. west of Marysville easterly to Napanee	10.00	1962	6.50	125,975
2	Curve easement 2 mi. east of Jct. Hwy. 15.	0.34	1962	0.34	10,936
2	Intersection Rocky Road and Hwy. 2, 1.2 mi. east of Maitland	0.63	1962	0.63	8,252
33	Kingston to Collins Creek (shoulders)	3.67	1961	.....	524
33	Fairfield diversion to 2.7 mi. west of Collins Bay	0.90	1962	0.90	26,333
38	Service road at Hwy. 38 interchange	0.53	1962	0.53	3,262
41	Selby diversion	1.17	1962	1.17	11,763
7 T.C.	Kaladar easterly 8.56 mi.	8.56	1962	8.56	127,859
7 T.C.	Kaladar to Arden sideroad	8.84	1962	3.30	3,262
	TOTALS	73.49		49.21	726,789

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
2	Pavement widening, vicinity of Vimy Barracks	.08	1962	.08	100

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
7	8 mi. west of Perth	2 toilets	1962	1962
401	2 mi. east of Gananoque	2 toilets	1962	1962
401	1.25 mi. east of Prescott	Weigh scale	1962	1962
133	Camden patrol yard	Garage	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		2,602	
Off-road parks maintained	11		
Roads snowploughed and kept open, King's Highways			746.60
Roads snowploughed and kept open, Secondary Highways			20.60
Roadside picnic places maintained	58		
Routine maintenance, King's Highways			746.60
Routine maintenance, Secondary Highways			20.60
Salt in sand, stockpiled		15,713	
Sand for winter maintenance		51,366	
Scale houses maintained	3		
Seeding by department's forces (acres)	424.7		
Shrubs received and planted this year	8,810		
Signs erected or replaced	3,420		
Snow fence erected, dismantled, stored			35.3
Traffic lights installed this year	3		
Weed control (gals.)	880		919.0
Zone painting on King's Highways (gals.)	10,495		932.5
Zone painting on Secondary Highways (gals.)	245		23.5

April 1, 1962 to March 31, 1963

FERRY "QUINTE"							FERRY "LOYALIST"							TOTALS		
														Totals — Both Ferries		
Year	Month	Days Worked	Trips	Cars	Trucks	Total	Year	Month	Days Worked	Trips	Cars	Trucks	Total	Cars	Trucks	Total
1962	April	27	664	6,643	264	6,907	1962	April	23	790	8,884	716	9,600	15,527	980	16,507
	May	31	1,060	8,390	504	8,894		May	31	943	11,287	1,052	12,339	19,677	1,556	21,233
	June	30	1,332	11,324	504	11,828		June	30	994	11,069	889	11,958	22,393	1,393	23,786
	July	31	1,432	18,004	500	18,504		July	31	1,086	18,492	957	19,449	36,496	1,457	37,953
	August	31	1,477	19,562	520	20,082		August	31	1,073	20,109	857	20,966	39,671	1,377	41,048
	September	30	1,295	12,050	487	12,537		September	30	978	11,873	714	12,587	23,923	1,201	25,124
	October	31	1,331	9,909	497	10,406		October	31	988	8,881	758	9,639	18,790	1,255	20,045
	November	30	1,195	7,554	424	7,978		November	30	886	6,466	536	7,002	14,020	960	14,980
	December	31	924	4,541	243	4,784		December	31	967	6,738	531	7,269	11,279	774	12,053
1963	January	30	456	2,286	195	2,481	1963	January	28	832	7,162	633	7,795	9,448	828	10,276
	February	.....	.....	.....	.....	.....		February	28	1,148	9,216	729	9,945	9,216	729	9,945
	March	2	19	318	.....	318		March	31	1,349	13,363	834	14,197	13,681	834	14,515
	Totals	304	11,185	100,581	4,138	104,719		Totals	355	12,034	133,540	9,206	142,746	234,121	13,344	247,465

Ferry "Quinte" — Not operating April 16 to 18 inclusive. Not operating January 27. February — used for Ice Breaking. Operating March 29 and 30 only.
Ferry "Loyalist" — Not operating April 24 to 30 inclusive. Not operating December 8-22-23.

"QUINTE"

Peak Traffic: August —

Trips	1,477
Cars	19,562
Trucks	520
Total days worked	304
Total cars carried	100,581
Total trucks carried	4,138
Total trips	11,185

"LOYALIST"

Peak Traffic: August —

Trips	1,073
Cars	20,109
Trucks	857
Total days worked	355
Total cars carried	133,540
Total trucks carried	9,206
Total trips	12,034

DISTRICT No. 9—OTTAWA

L. E. WALKER, P.Eng., District Engineer

Construction

Ottawa Queensway, Highway 17 — T.C.H.

Construction was carried out in 1962 on Stage III with earth grading, structures and drainage work from Island Park Drive to Elgin Street, a distance of 3.5 miles. Eleven structures were under construction, six of which were completed during 1962. The remaining five structures will be completed early in 1963. The west-bound lane of concrete pavement will be open to traffic from Bronson Avenue to the Carling Avenue interchange by the fall of 1963.

Highway 17 — Kennedy's Corners to Antrim

Hot mix resurfacing was carried out over a distance of 16.7 miles. HL-8 binder course was completed in 1962. The wearing course will be completed in June 1963.

Highway 17 — Meath to Pembroke (9.4 miles)

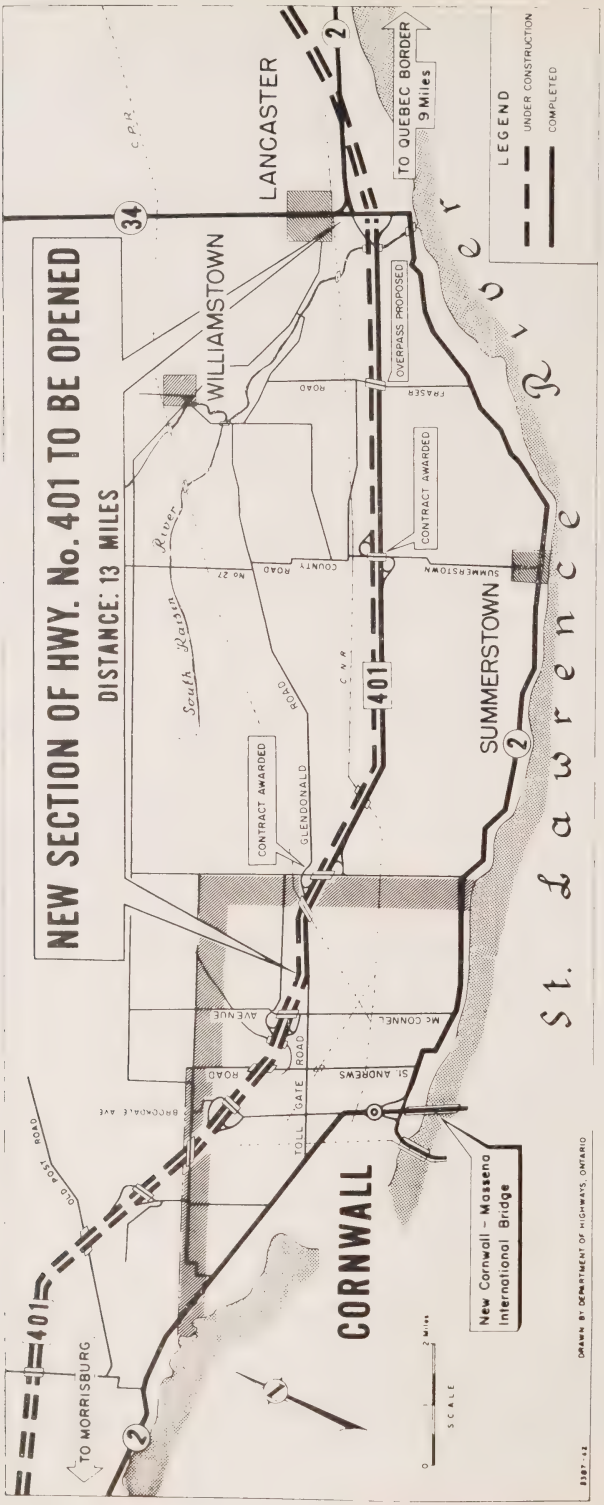
Earth and granular grading, drainage and hot mix pavement was carried out during 1962 with extensive sub-excavation and storm sewage, curb and gutter work being done in the town of Pembroke. This contract will be completed in June 1963.

Highway 16 — Manotick By-pass

This contract which contained earth and granular grading, drainage and hot mix pavement was primarily constructed in 1961. In the early spring of 1962,



Highway 17—Rock drilling near Cobden (Ottawa District).


NEW SECTION OF HWY. No. 401 TO BE OPENED
DISTANCE: 13 MILES
LANCASTER
WILLIAMSTOWN
SUMMERSTOWN
CORNWALL
TO MORRISBURG
TO QUEBEC BORDER
9 Miles
OVERPASS PROPOSED
CONTRACT AWARDED
CONTRACT AWARDED
New Cornwall - Massena
International Bridge
St. Lawrence River
LEGEND
UNDER CONSTRUCTION
COMPLETED
SCALE
401
34
2
1
C.P.R.
C.N.R.
South Raisin River
GLENDONALD ROAD
COUNTY ROAD No 27
FRASER ROAD
OLD 401 ROAD
BROOKDALE AVE
TOLL GATE ROAD
ST. ANDREWS ROAD
Mc CONNEL AVENUE
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO



Ottawa Queensway near Pinecrest Road (Ottawa District).

minor trim work was completed and hot mix resurfacing of Old Highway 16 in the Manotick area (6.0 miles) was completed.

Highway 17 — (Highway 44 to Antrim), W.P. 23-61, 9.2 miles

During the winter months a clearing operation was carried out by day labour forces. An average of fifty men, all qualified for relief payments or unemployment insurance, were employed for 2½ months. Sixty acres of clearing was carried out.

Highway 401

The concrete paving of the east-bound lane from Toll Gate Road to one mile east of Lancaster, a distance of 14.4 miles, was completed. This section was opened as far as Lancaster in September 1962. The concrete paving contracts to complete the work from Aultsville to one mile east of Lancaster were awarded. The concrete pavement was placed from Aultsville Road to Ingleside last fall, a distance of 3.0 miles. The grading contracts from Lancaster to the Quebec boundary were awarded and 50 per cent completed last year.

Due to the exceptionally wet weather, the grading contracts which were in progress, were greatly delayed.

Maintenance

Highway 17 — Trans-Canada at Cumberland Park

Several land slides have occurred at this location and since further slides could endanger Highway 17, T.C.H., approximately 40,000 tons of rock were placed on the slope to try and stabilize it.

Old Highway 2 — Morrisburg, Westerly

13,500 tons of rock rip-rap and 3,000 lineal feet of flex beam guide rail was placed to try and control shoreline erosion due to wave action since the opening of the Seaway.

Highway 401

Highway 401 was opened from Lancaster to Cornwall, a distance of 14 miles. Construction of a new six-bay metal patrol garage was started at L'Orignal and a standard salt shed was erected on the site.

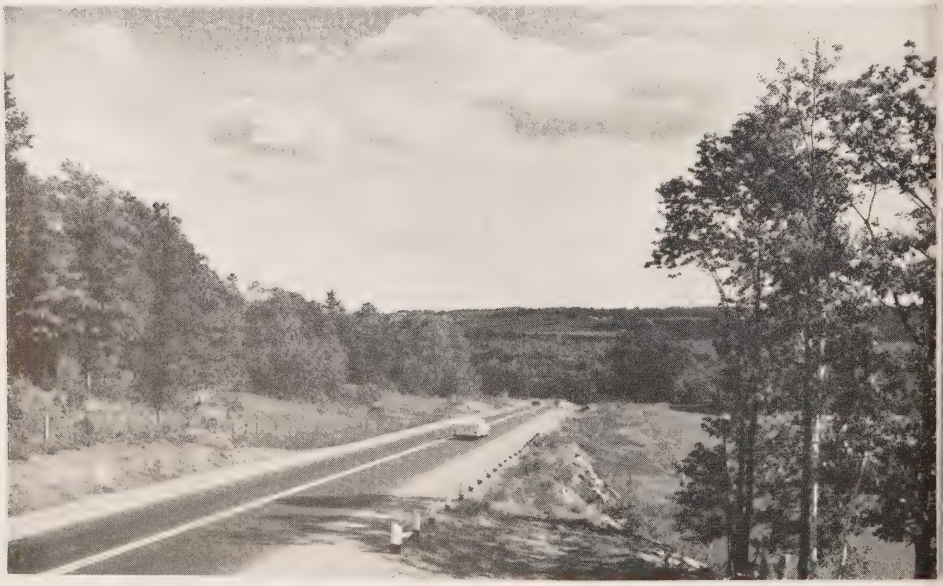
New standard salt sheds were constructed at Winchester and Avonmore. Due to salt contamination of wells at the west entrance to Carleton Place on Highways 7 and 15 and at a school opposite the patrol yard on Highway 43 at Winchester, corrective measures were taken. At Carleton Place, exposed rock was grouted and half-pipe ditch liner was placed in highway ditch. The same method was used at Winchester, except that the half-pipe was placed around and away from the sand stockpile.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
17	C.N.R.	Town of Arnprior	2 flash. lights, 2 bells

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17	Meath to Pembroke	9.40	1962	5.6	16,466
Q'way	Loretta to Bronson Avenue	.....	1962	.....	1,805
Q'way	Bronson to O'Connor	.....	1962	.....	5,052
Q'way	Metcalfe Street detour	.....	1962	.....	759
Q'way	Bank Street detour	.....	1962	.....	767
401	East of Hwy. 31 easterly 8.18 mi.	.....	1962	.....	1,270
401	Aultsville Road to Avonmore Road	.....	1962	.....	2,111
	TOTALS	9.40		5.60	28,230



Highway 17—Three miles south of Pembroke (Ottawa District).

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
17	From Chute-a-Blondeau to Hwy. 17 T.C.	1.70	6,400	231

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
16	Resurfacing old Hwy. 16, Manotick (top course only)	6.06	6,294
17	Carp to Antrim (base course only)	16.70	27,379
	TOTALS	22.76	33,673

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
43	Jct. Hwy. 31 to 5.1 mi. west, Jct. Hwy. 16 to Merrickville	16.60	48,752	2,124

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
Q'way	Bridge No. 14 at C.P.R. near Preston	1961	.....	Reinforced concrete
Q'way	Bridge No. 15 at Preston Street	1961	.....	Reinforced concrete
Q'way	Bridge No. 16 at Rochester Street	1961	.....	Reinforced concrete
Q'way	Bridge No. 17 at Booth Street	1961	.....	Reinforced concrete
Q'way	Bridge No. 19 at Percy Street	1962	.....	Reinforced concrete
Q'way	Pedestrian overpass at Harmer Ave.	1962	.....	Composite, prestressed girder, reinf. concrete
401	Underpass at road to St. Andrews West	1961	1962	Reinforced concrete
401	Overpass at County Road 19, Cornwall Twp.	1961	.....	Reinforced concrete
401	South Raisin River on Brookdale Ave.	1961	.....	Reinforced concrete
401	Overpass at St. Andrews Road	1961	.....	Reinforced concrete
401	South Raisin River	1961	.....	Composite, reinforced concrete, steel girder
401	Overpass at McConnell Avenue	1961	.....	Reinforced concrete
401	Bridge No. 16 at C.P.R., Cornwall Twp.	1961	.....	Composite, reinforced concrete, steel girder
401	Bridge No. 4 at C.N.R., Cornwall Twp.	1961	.....	Composite, reinforced concrete, steel girder
401	Bridge No. 10 at Raisin River, Charlottenburg Twp.	1961	.....	Reinforced concrete
401	Dickinson Drive interchange	1961	.....	Reinforced concrete

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Sq. Yds. Placed 1962–63
401	St. Andrews Road to Lancaster	14.4	1961	14.4	202,752
401	From 9 mi. east of Hwy. 31 to 14 mi. east	5.3	1962	3.0	84,480
	TOTALS	19.70		17.40	287,232

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17	Meath to Pembroke	9.40	136,265
17	Kennedy's Corners to Antrim	16.70	26,658
17	0.5 mi. east of Nation River (Stockpile)	.....	4,993
17	Patrol yard at Carp (Stockpile)	.....	4,990
43	Finch easterly	.....	5,965
401	Patrol yard at Iroquois (Stockpile)	.....	4,995
43	Winchester westerly	.....	5,997
17	Rockland to Jct. Hwy. 34	.....	2,200
2	Cornwall easterly	.....	2,377
Q'way	Bell to O'Connor Street	0.9	17,048
401	Summerstown county road to Hwy. 2	6.60	47,232
401	Toll Gate Road to Summerstown Road	7.37	17,872
401	14 mi. east of Hwy. 31, easterly 8.18 mi.	8.18	90,492
401	From 9 to 14 mi. east of Hwy. 31	5.30	119,473
401	Toll Gate Road to 1 mi. east of Lancaster	13.82	120,740
	TOTALS	67.46	607,297

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
17	Meath to Pembroke	9.40	1961	9.40
Q'way	Loretta Avenue to Bell Street	0.50	1961	0.34
Q'way	Bell Street to O'Connor Street	0.90	1961	0.06
401	Aultsville Road, easterly 5.3 mi.	5.30	1961	0.60
401	5.3 mi. east of Aultsville Road to Avonmore Road	5.01	1961	1.41
401	Moulinette Road easterly 5.8 mi.	5.80	1961	1.21
401	Brookdale Avenue to Toll Gate Road	1.68	1961	1.48
401	Cornwall to Summerstown county road	7.37	1961	3.25
401	Summerstown county road to Hwy. 2	6.06	1961	1.76
401	1 mi. east of Lancaster, easterly 5 mi.	5.28	1962	3.17
401	Quebec boundary, westerly 2.86 mi.	2.86	1962	1.14
	TOTALS	50.16		23.22

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17	Meath to Pembroke	9.40	1962	9.40	131,991
401	St. Andrews Road to 1 mi. west of Lancaster	14.4	1960	8.90	27,348
401	14 mi. east of Hwy. 31, easterly 8.18 mi.	8.18	1962	4.27	90,492
401	9 mi. to 14 mi. east of Hwy. 31	5.30	1962	5.30	119,473
401	Toll Gate Road to 1 mi. east of Lancaster	13.82	1962	5.39	120,740
	TOTALS	51.10		33.26	490,044

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
43	2 mi. west of Avonmore	Salt shed	1962	1962
43	Winchester	Salt shed	1962	1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Off-road parks maintained	6		
Roads snowploughed and kept open, King's Highways			649
Roads snowploughed and kept open, Secondary Highways			43
Roadside picnic places maintained	20		
Routine maintenance, King's Highways			649
Routine maintenance, Secondary Highways			43
Salt for de-icing roads (raw)		15,610	
Salt in sand, stockpiled		990	
Sand for winter maintenance		22,500	
Scale houses maintained	1		
Seeding by department's forces (sq. yds.)	175		
Shrubs received and planted this year	3,453		
Signs erected or replaced	4,921		
Snow fence erected, dismantled, stored	3,779		
Traffic lights installed this year	1		
Weed control			457
Zone painting on King's Highways			835
Zone painting on Secondary Highways			43

DISTRICT No. 10—BANCROFT

W. G. WIGLE, P.Eng., District Engineer

Construction

The grading of Highway 62 from Bannockburn northerly 8.5 miles was completed in August and placing of the bituminous pavement was completed in the fall. Approximately 50 per cent of the grading work was completed at the close of the year on a further 6.4 miles of Highway 62 extending northerly. Paving of 7 miles of Secondary Highway 512 from Cormac to Brudenell was completed in July. The Indian River bridge on Highway 41 at Pembroke, on which construction was begun in July, was opened to traffic in February 1963. The day labour programme in the district was extensive. Grading work was completed on Highway 127 to the junction of Highway 60 and with the completion of the placing of granular base by contract, the highway was opened to traffic in the fall. Work was carried out on the regrading of Secondary Highways 500, 506, 515 and 620. Under the winter works programme grading work was continued on Secondary Highways 500, 506, 515 and 620. In addition several narrow rock cuts were widened and clearing operations carried out on the right-of-way in advance of future grading contracts.

Maintenance

During the year construction began on new four-bay patrol garages at Apsley and Madawaska which will greatly improve facilities at these locations. In addition new wells were drilled at our patrol yards at Jack's Lake, Pembroke and Ormsby.

Approximately 20.7 miles of highway were surface treated with limestone chips.



Highway 500—Rock grading, day labour (Bancroft District).

Bituminous prime dust layer was applied to 114 miles of Secondary Highways.

Zone painting was completed over 427 miles.

More than 425,000 square yards of right-of-way were seeded and approximately 320 miles sprayed with weed and brush chemicals.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
62	C.N.R.	Near Pembroke, Lot. 32, Con. 1, Stafford Twp.	2 lights, 1 bell
60	C.N.R.	At. Barry's Bay, Lot 184, Con. 5, Sherwood Twp.	2 lights, 1 bell
28	C.N.R.	At. Bancroft	2 lights
62	C.N.R.	South of Bancroft, Lot 53, Con. W.H.R., Faraday Twp.	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
512	Brudenell to Cormac (base course)	7.13	1962	7.13	12,214.84
62	Bannockburn northerly 8.54 mi. (base course)	8.54	1962	8.54	13,821.89
	TOTALS	15.67		15.67	26,036.73

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1962–63	Tons Placed 1962–63
62	Papineau Creek revision, 7.1 to 8.8 mi. east of Maynooth.	1.7	1.7	3,27

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
500	Bancroft to Hermon	14.5	42,102	755.20
504	Apsley to Glen Alda	26.0	57,553	1,753.60
506	Hwy. 41 to Plevna	22.0	66,443	1,625.30
513	Dacre to Caldwell	10.5	21,179	519.90
515	Combermere to Quadeville	18.0	49,746	894.90
517	Combermere to New Carlow Road	9.9	17,717	494.10
523	Madawaska to Lyell-Wicklow township line	13.1	31,418	716.80
	TOTALS	114.0	286,158	6,759.80

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
62	5.0 mi. south to 7.0 mi. east of Maynooth	12.0	38,264	1,934.77
62	8.5 mi. to 9.5 mi. east of Maynooth	1.0	5,314	218.00
127	11.8 mi. to 13.5 mi. north of Maynooth	1.7		
620	Apsley east 3 mi. and Apsley village	4.0	13,526	668.11
620	1.0 mi. east and 1.0 mi. west of Glen Alda	2.0		
	TOTALS	20.7	57,104	2,820.88

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of structure
41	Indian River bridge, Pembroke	1962	1963	Reinforced concrete, prestressed beams

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
28	Bancroft patrol yard (stockpiled for maintenance)	.....	9,993
41	Indian River bridge at Pembroke	1.86	6,997
41	Eganville southerly	6.36	55,323
60	D.H.O. patrol yard, Whitney (stockpiled)	.....	9,990
60	3 mi. east of Douglas (stockpiled)	.....	5,044
62	Bannockburn northerly	8.50	97,607
62	From 8.5 mi. north of Bannockburn, northerly to 0.3 mi. north of St. Ola Road	6.42	33,535
62	7.1 mi. to 8.8 mi. east of Maynooth	1.70	10,000
127	3.5 mi. to 9.0 mi. north of Lake St. Peter	5.50	29,995
127	Robinson Lake to Hwy. 60	2.50	19,994
500	Hermon to McArthur's Mills	3.93	100
500	10 mi. to 11.5 mi. east of Bancroft	1.50	29,000
506	From Hwy. 41 to 3.0 mi. east	3.00	27,992
515	2 mi. to 4.0 mi. south of Hwy. 62	2.00	20,997
620	Glen Alda westerly	1.80	22,002
	TOTALS	45.07	378,569

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
500	10.0 mi. to 11.5 mi. east of Bancroft	1.5	5,439
620	2 mi. west of Coe Hill	0.38	900
	Various locations throughout the district for various maintenance work	..	37,189
	TOTALS	1.88	43,528

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
41	Eganville southerly	6.36	1962	4.77
41	Indian River bridge	0.66	1962	0.66
62	Bannockburn northerly	8.50	1961	4.00
62	From 8.5 mi. north of Bannockburn to St. Ola Road	6.42	1962	6.00
127	Robinson Lake to Hwy. 60	2.50	1961	2.16
500	Hermon to McArthur's Mills	3.93	1962	2.12
500	Bowen's Corners to Bronson Lake	1.80	1962	1.80
506	Vicinity of Marble Lake	2.37	1960	0.48
506	Vicinity of Marble Lake	0.50	1962	0.50
515	Combermere to Jewelville	2.16	1960	1.10
620	2 mi. west of Coe Hill	0.38	1961	0.38
620	Glen Alda to Chandos Lake	4.00	1959	1.90
	TOTALS	39.58		25.87

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962-63
41	Eganville southerly	6.36	1962	4.77	187,770
41	Indian River bridge at Pembroke	0.66	1962	0.66	25,973
62	Bannockburn northerly	8.50	1961	4.00	120,800
62	8.5 mi. north of Bannockburn to St. Ola Road	6.42	1962	2.82	100,276
62	7.1 mi. to 8.8 mi. east of Maynooth	1.70	1962	1.70	10,000
127	3.5 mi. to 9.0 mi. north of Lake St. Peter	5.50	1962	5.50	29,995
127	Robinson Lake to Hwy. 60	2.50	1962	2.50	75,780
500	Bowen's Corners to Bronson Lake	1.50	1962	1.50	12,480
506	From Hwy. 41 to 3 mi. east	3.00	1962	3.00	15,000
515	2.0 mi. to 4.0 mi. south of Hwy. 62	2.00	1962	2.00	5,227
620	Glen Alda westerly	1.80	1962	1.80	8,600
	TOTALS	39.94		30.25	592,901

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
41	1 mi. north of Cloyne	Patrol garage	1962	June, 1962
28	Apsley	Patrol garage	1962	Feb., 1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	13		
Development roads built			19.0
Off-road parks maintained	24		
Roads snowploughed and kept open, King's Highways	.....	.....	411.94
Roads snowploughed and kept open, Secondary Highways	.....	.....	173.58
Roadside picnic places maintained	2	.....	.....
Routine maintenance, King's Highways	.....	.....	411.94
Routine maintenance, Secondary Highways	.....	.....	173.58
Salt for de-icing roads (raw) (coarse)	.....	4,665	.....
Salt in sand, stockpiled (fine)		1,450	
Sand for winter maintenance		44,937	
Scale houses maintained	2	.....	.....
Seeding by department's forces (sq. yds.)	425,920		
Shrubs received and planted this year	5,000	.....	.....
Signs erected or replaced	2,509	.....	.....
Snow fence erected, dismantled, stored	.....	.....	25.0
Weed control			320.00
Zone painting on King's Highways (gals.)	6,867	.....	441.00
Zone painting on Secondary Highways (gals.)	1,029	.....	57.00

DISTRICT No. 11—HUNTSVILLE

E. H. JONES, P.Eng., District Engineer

Construction

As in 1961–62, there was a reduction in the volume of construction work carried out in Huntsville District.

Resurfacing of Highway 69B and the connecting link through Parry Sound was completed early this year. An additional seven miles of grading on Highway 60 from Smoke Creek to Algonquin Park headquarters (Huntsville District boundary) was completed during the early summer months. The contract for hot mix paving, base course only, was awarded but was not completed. Also on Highway 60 a new structure was completed and opened to traffic over the Oxtongue Lake Narrows. On Secondary Highway 518 near Kearney, a new structure was completed and opened to traffic. This eliminated a sharp curve to the old existing one-way structure.

Two new grading contracts were awarded during the year. On Highways 35 and 60 construction was started on 7.39 miles from the junction of Highway 11B easterly to Hillside and including a new structure over Ballantyne Creek. On Highway 118 from 5 miles west of Bracebridge, work was started over 5.86 miles which will by-pass the village of Milford Bay.

During the summer and winter, grading work by day labour was carried out by Department of Highways forces on the following Secondary Highways 501, 503, 507, 514, 532 and on King's Highway 124.

No new equipment or techniques were employed.

Maintenance

No unusual maintenance problems were encountered in the district during the year, and routine maintenance was carried out in much the same manner as in the past year.

Our day labour forces laid 15.7 miles of mulch pavement at various locations throughout the district, also 68,000 tons of sand were screened, treated and stockpiled for winter maintenance.

Extensive repairs were carried out on the deck of the Magnetawan River bridge on Highway 11 at Burk's Falls.

The installation of two-way radios in several of our patrol yards greatly improved our communications system.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
69 T.C.	From south end of Parry Sound By-pass to 2.0 mi. north of Nobel	9.68	1961	1.3	3,624
Old 69	By-pass portions of old Hwy. 69 including weigh scales	1.34	1961	1.0	1,844
Old 69	By-pass portions of old Hwy. 69 through Parry Sound	1.36	1961	1.36	2,696
60	Structure and approaches, Oxtongue Lake Narrows	0.32	1962	0.32	1,193
532	Connecting link, town of Bracebridge	0.55	1962	0.55	2,300
	TOTALS	13.25		4.53	11,657

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1962–63	Tons Placed 1962–63
35	Carnarvon to Dorset (isolated sections)	2.7	2.7	4,050
118	Baysville	0.6	0.6	900
124	McKellar to 0.6 mi. north of McKellar	0.6	0.6	990
124	3.2 mi. north of McKellar to 4.5 mi. north of McKellar.	1.3	1.3	2,150
124	Jct. Secondary Hwy. 510 to 2 mi. west	2.0	2.0	3,300
500	Kinmount to Irondale (sections)	0.8	0.8	1,200
503	3.3 mi. east of Jct. Hwy. 35 to 5.3 mi. east of Hwy. 35	2.0	2.0	3,300
519	South Jct. Hwy. 121 to Lochlin (sections)	3.6	3.6	5,940
532	5.7 mi. north of Bracebridge to 7.0 mi. north of Bracebridge	1.3	1.3	2,150
532	Shadow River to Whitefish Lake	0.8	0.8	1,320
	TOTALS	15.7	15.7	25,300

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
111	Jct. Hwys. 109 and 111, Dyno Mines	3.2	8,000	240
124	3.3 mi. east of McKellar to Jct. Secondary Hwy. 510	17.5	43,750	1,230
501	Jct. Hwy. 103 to Honey Harbour	9.1	22,750	680
503	5.6 mi. west of Kinmount to Norland	4.4	11,000	330
514	Jct. Hwy. 35 to Interlaken	10.0	25,000	750
518	Jct. Hwy. 69 to Orrville	12.0	30,000	900
518	Sprucedale to Bear Lake	7.0	17,500	520
519	Eagle Lake to Redstone Lake	4.1	10,250	300
519	1.5 mi. south of Haliburton to Jct. Hwy. 121	19.4	48,500	1,500
520	Dunchurch to Ardbeg	16.5	41,250	1,200
520	Jct. Hwy. 124 to Magnetawan	1.9	4,750	150
530	Carnarvon to Jct. Secondary Hwy. 519	12.0	31,951	928
532	Shadow River to Whitefish Lake (sections)	2.5	6,250	200
	TOTALS	119.6	300,951	8,928

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
12	0.5 mi. west of Jct. Hwy. 11 to Hwy. 103	17.44	22,558
103	Various locations on Hwy. 103	3.0	3,203
	TOTALS	20.44	25,761

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
124	Jct. Hwy. 69 to McKellar	13.5	31,000	1,485
124	Ahmic Harbour By-pass	3.0	6,900	330
519	Eagle Lake to Redstone Lake	4.1	9,000	450
532	Shadow River to Whitefish Lake	3.0	7,000	330
632	Rosseau to Port Carling (sections)	10.4	23,876	1,120
	TOTALS	34.0	77,776	3,715

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
60	Oxtongue Narrows bridge	1961	1962	Structural steel and reinforced concrete
518	Magnetawan River bridge, 1.5 mi. west of Kearney	1962	1962	Structural steel and reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	5 mi. south of Burks Falls to 9.57 mi. north	9.57	112,453
69	Hayes Corners to Parry Sound By-pass	10.20	10,400
69	From south end Parry Sound By-pass to 2 mi. north of Nobel	12.38	3,241
124	Jct. Secondary Hwy. 510 and Hwy. 124 to 4.5 mi. west	4.5	19,997
519	Various, south of Jct. Secondary Hwy. 519 and Hwy. 121 easterly	.....	7,846
35	Carnarvon to Dorset	17.0	10,000
507	Gooderham to 5 mi. southerly	5.0	10,000
501	Jct. Hwy 103 to Honey Harbour and stockpile at Coldwater yard.	9.0	20,000
518	Orrville to Sprucedale	21.1	5,000
525	Hwy. 11B to Gravenhurst Sanatorium	1.7	12,000
503	Kinmount to Norland	10.0	10,600
532	Rosseau to Hayes Corners	2.0	14,000
	TOTALS	102.45	235,537

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	Crown Hill to 4.0 mi. north of Burks Falls	104.7	1,200
12 T.C.	Atherley Narrows to Midland	35.2	408
35	Jct. Hwy. 11B (Huntsville-Haliburton-Victoria boundary)	75.0	1,310
60	Jct. Hwys. 60 and 35 (Dwight) to Algonquin Park headquarters.	28.4	100
69 T.C.	Jct. Hwy. 11 (Gravenhurst) to 1.5 mi. north of Pointe-au-Baril	84.9	1,210
103 T.C.	Jct. Hwy. 12 (Waubaushene) to Jct. Hwy. 69 (Footes Bay)	31.4	780
109	Jct. Secondary Hwy. 500 to Cardiff township line	12.4	80
111	Jct. Secondary Hwy. 500 to Dyno Mines	7.6	24
118	Jct. Hwy. 69 (Glen Orchard) to Jct. Hwy. 35 (Dorset)	55.6	260
121	Kinmount to Tory Hill	42.0	1,400
124	Jct. Hwy. 69 to Jct. Secondary Hwy. 510 (Magnetawan)	39.2	6,630
400	Craighurst to Coldwater	12.4	60
500	Kinmount to Hwy. 111	51.1	900
501	Jct. Hwy. 103 to Honey Harbour	9.1	1,860
503	Kinmount to Norland	10.0	678
507	Gooderham to 5.0 mi. southerly	5.0	1,180
514	Hwys. 35 and 60 to Interlaken	10.0	2,264
516	Jct. Hwy. 11 to Windermere	15.7	122
518	Hwy. 69 to Kearney	46.0	8,024
519	Redstone Lake to Hwy. 121	33.6	566
520	Hwy. 11 at Burks Falls to Ardbeg	33.7	1,680
527	Huntsville to Baysville	16.7	72
529	Jct. Hwy. 9 to Bayfield Inlet	7.6	56
530	Carnarvon to Secondary Hwy. 519	12.0	6,200
532	Jct. Hwy. 69 to Jct. Hwy. 11	43.2	208
559	South Jct. Hwy. 69 to north Jct. Hwy. 69	13.5	56
592	Novar to Emsdale	9.8	268
612	Jct. Hwy. 103 to Jct. Hwy. 69	7.0	212
632	Jct. Hwy. 118 to Jct. Secondary Hwy. 532	17.0	110
	TOTALS	869.80	37,888



Highway 69—By-pass at Boyne River (Huntsville District).

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
60	From Smoke Creek, easterly to district boundary, 6.84 mi.	6.84	1961	6.84
124	From Dunchurch to 1.2 mi. easterly	1.2	1961	1.2
124	From 0.5 mi. to 3.0 mi. west of Secondary Hwy. 520	3.0	1961	2.5
501	From Hwy. 103 to Honey Harbour	1.0	1961	0.6
514	From 9.0 mi. to 10.0 mi. north of Hwys. 35 and 60	1.0	1962	1.0
519	From 7.0 mi. to 8.0 mi. east of Hwy. 121	1.0	1962	1.0
532	From 4.5 mi. to 5.4 mi. west of Rosseau	0.9	1962	0.9
	TOTALS	13.94		13.44

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
60	Smoke Creek, easterly to Huntsville district boundary	6.84	1961	6.43	228,294
60	Approaches to Oxtongue Lake narrows bridge	0.32	1961	0.12	5,667
518	Approaches to Magnetawan River bridge, approximately 1.5 mi. west of Kearney	0.19	1961	0.19	899
	TOTALS	7.35		6.74	234,860

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
121	Minden	Patrol garage	1961	1962
11	Huntsville	Salt storage	1962	1962
118	Dorset	Equipment storage	1962	1962
11	Emsdale	Patrol garage	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	2		
Calcium dust layer on gravel roads		125	60.0
Development roads built			39.3
Off-road parks maintained	12		
Roads snowploughed and kept open, King's Highways	12		596.9
Roads snowploughed and kept open, Secondary Highways	18		304.5
Roadside picnic places maintained	47		
Routine maintenance, King's Highways			596.9
Routine maintenance, Secondary Highways			304.5
Salt for de-icing roads (raw)		9,300	
Salt in sand, stockpiled		2,890	
Sand for winter maintenance		93,000	
Scale houses maintained	3		
Seeding by department's forces (sq. yds.)	575,960		
Shrubs received and planted this year	500		
Signs erected or replaced	3,473		
Snow fence erected, dismantled, stored			64.0
Weed control			175.4
Zone painting on King's Highways (gals.)	10,316		499.0
Zone painting on Secondary Highways (gals.)	3,051		149.0

DISTRICT No. 13—NORTH BAY

G. MARTENS, P.Eng., District Engineer

Construction

Two contracts for grading and paving of Highway 11, from Sundridge to one mile south of Trout Creek, were completed by mid-summer. With the completion of this work an excellent highway is now available all the way from North Bay to Toronto.

The structures at Verner on Highway 64, and Bissetts Creek on Highway 17, started late in 1961, were completed late this fall. These bridges replaced structures which were narrow and carried load restrictions.

A contract for grading, culverts and granular base was awarded in early July, for a nine-mile section of Highway 64 from Lavigne to Verner. Work on this contract progressed very well, and by early December only a short section of about one-half mile was not graded. It is expected that this contract will be completed early next spring.

Three structures on Highway 11B were widened in preparation for the re-grading and paving of this highway from North Bay city limits to the junction of Highway 11.

Two grading contracts for Highway 11B were awarded in the early winter, and the contractor immediately started the installation of the storm sewers. In spite of the cold weather, work progressed quickly. This rapid progress was due mainly to the low water table during the winter months.

As in previous years, an extensive day labour programme was carried out during the fall and winter. This work consisted of pre-contract clearing, granular lifts and curve revisions.

Maintenance

Spring break-up was normal with little excessive frost damage to the highways.

Normal summer maintenance operations were carried out throughout the district.

The "Deslicker" was used to burn excess asphalt from the pavement for approximately three miles of the North Bay By-pass (Highway 17), which to date has shown marked improvement.

Traffic lights were installed at O'Brien Street and at the North Bay By-pass.

Bituminous prime dust layer was applied to 48 miles of secondary highways, and mulch surface was constructed on 26 miles of gravel roads which was delayed by frequent rains during the summer.

Extensive cold patching was carried out on Highway 17 from Mattawa to Colton Lake.

Considerable clearing of right-of-way was carried out as a winter unemployment relief programme.

The fall season was moderately wet; snowfalls came earlier than usual, and de-icing was necessary in late October.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
11	Sundridge northerly	6.81	1961	6.81	19,388
11	2.3 mi. north of South River, northerly	6.43	1961	6.43	25,191
11	Tomiko bridge	0.11	1961	0.11	180
17 T.C.	Bissetts Creek	1.68	1961	1.68	2,350
17 T.C.	Access road, Atomic Energy, Chalk River (base course only)	0.18	1962	0.18	304
17 T.C.	Entrances, various locations, Petawawa (base course only)	.....	1962	.....	296
	TOTALS	15.21		15.21	47,709

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1962–63	Tons Placed 1962–63
63	29 mi. north of North Bay, northerly	2.5	2.5	4,397
64	2 mi. south of Noelville, southwesterly	5.1	5.1	8,671
124	2.2 mi. west of Hwy. 11, westerly	0.8	0.8	1,241
510	Magnetawan, Jct. Hwy. 124	1.8	1.8	2,200
522	1 mi. west of Hwy. 11, westerly	1.2	1.2	2,428
533	3 mi. north of Mattawa, northerly	5.2	5.2	7,655
534	9 mi. west of Powassan, westerly	1.2	1.2	1,530
534	20 mi. west of Powassan, westerly	1.2	1.2	1,806
535	0.5 mi. south of St. Charles, southerly	3.1	3.1	5,683
630	3.4 mi. south of Hwy. 17, southerly	3.9	3.9	5,316
	TOTALS	26.0	26.0	40,927

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
64	Town of Noelville	1.4	3,586	168
64	Alban	0.9	2,300	108
64	9 mi. east of Noelville, easterly	2.0	5,124	240
64	Town of Lavigne	0.7	1,790	84
74	Field northerly	10.0	25,620	1,200
524	Hwy. 522 to Hwy. 534	3.0	7,680	360
534	Powassan to Restoule	19.0	48,680	2,280
535	Various locations	1.0	2,562	120
539	Field to River Valley	10.0	25,642	1,200
	TOTALS	48.0	122,984	5,760

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Tons Placed 1962–63
17 T.C.	Klocks easterly, various sections (pavement patching only)	5,250

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
11	Temagami, various locations	5.0	15,276	600
63	Temiskaming south westerly	3.0	9,150	360
123	Airport Road	0.5	1,525	60
522	Arnstein to Loring	5.0	15,250	600
	TOTALS	13.5	41,201	1,620

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11B	Lavase Creek, Nipissing Junction	1962	1962	Rigid concrete
11B	Parks Creek, 1.5 mi. south of North Bay	1962	1962	Rigid concrete
11B	Jessops Creek, 2.3 mi. south of North Bay	1962	1962	Steel girder
17 T.C.	Bissetts Creek, Bissetts	1961	1962	Steel girder
64	Veuve River, Verner	1961	1962	Steel girder

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	1 mi. north of Sundridge to 2 mi. north of South River	6.81	12,551
11	Tomiko bridge	.....	381
11	2 mi. north of South river to 1 mi. south of Trout Creek	6.43	55,920
17 T.C.	Klocks (stockpiled)	.....	5,000
17 T.C.	Bissetts Creek	1.68	21,750
17 T.C.	Intersection, Atomic Energy, Chalk River	0.18	1,878
63	Little Jocko River (stockpiled)	.....	10,000
64	Vicinity Noelville, Hwys. 528 and 607, various locations	29.00	29,000
64	Lavigne to Verner	7.91	46,565
64	Veuve River bridge, Verner	.....	1,290
522, 534	Hwy. 11 westerly (stockpiled)	.....	12,000
533	Jct. Hwy. 63 southerly	20.00	30,000
535	Veuve River, St. Charles southerly	21.00	10,000
630	4 mi. south of Hwy 17, Kiosk	11.00	26,000
	TOTALS	104.01	262,335

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	4 mi. north of Burks Falls to Latchford	131.0	2,598
17 T.C.	Pembroke to Hagar	181.0	6,046
63	North Bay to Temiskaming	40.0	150
64	Rutter to Marten River	85.0	21,000
94	Callander to Hwy. 17	6.0	198
123	Hwy. 11 to airport	5.2	230
124, 510	Hwy. 11 to Magnetawan	15.0	725
522	Trout Creek to Loring	38.0	4,762
528	Hwy. 64 to Wolseley Bay	11.0	1,647
533	Mattawa to Hwy. 63	34.0	825
534	Powassan to Restoule	23.0	4,000
535	Veuve River to Noelville	31.0	10,756
539	Warren to Field	26.0	2,227
607	French River to Hwy. 64	8.0	573
630	Hwy. 17 to Kiosk	19.0	682
	TOTALS	653.2	56,419

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
11	2 mi. north of South River to 1 mi. south of Trout Creek	6.43	1961	3.43
17 T.C.	Bissetts Creek	1.68	1961	1.68
17 T.C.	Point Alexander, west of Deep River, northwesterly	9.55	1962	.....
64	6 mi. west of Noelville, westerly	2.50	1962	2.50
64	Lavigne to Verner	7.91	1962	7.41
522	Trout Creek westerly	1.00	1962	0.50
522	7 mi. west of Trout Creek, westerly	0.50	1962	0.50
533	11.1 mi. north of Mattawa, northerly	2.00	1963	2.00
	TOTALS	31.57		18.02

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
11	2 mi. north of South River to 1 mi. south of Trout Creek	6.43	1961	3.43	55,920
11	Tomiko bridge	0.11	1961	0.11	1,337
17 T.C.	Bissetts Creek	1.68	1961	1.68	77,050
17 T.C.	Intersection, access road, Atomic Energy, Chalk River	0.18	1962	0.18	1,878
64	Verner, Veuve River bridge approaches	.....	1961	.....	4,590
64	Verner to Lavigne	7.91	1962	7.41	295,005
64	6 mi. west of Noelville, westerly	2.50	1962	2.50	54,331
522	Trout Creek westerly	1.00	1962	0.50	38,600
522	7 mi. west of Trout Creek, westerly	0.50	1962	0.50	41,976
533	11.1 mi. north of Mattawa, northerly	2.00	1963	2.00	14,154
	TOTALS	22.31		18.31	584,841

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
63	2.5 mi. north of Little Jocko River, northerly	2.0	1963	2.0	39,234
522	2.3 mi. west of Hwy. 11, westerly	2.5	1962	2.5	70,290
535	3 mi. south of St. Charles, southerly	2.0	1962	2.0	29,226
630	7 mi. south of Hwy. 17, southerly	2.5	1962	2.5	29,688
	TOTALS	9.0		9.0	168,438

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,288	267.12
Calcium for de-icing roads	.....	3.95	.....
Off-road parks maintained	12	.....	.....
Roads snowploughed and kept open, King's Highways	7	.....	479
Roads snowploughed and kept open, Secondary Highways	12	.....	202
Roadside picnic places maintained	22	.....	.....
Routine maintenance, King's Highways	.....	.....	479
Routine maintenance, Secondary Highways	.....	.....	202
Salt for de-icing roads (raw)	.....	5,620	525
Salt in sand, stockpiled	.....	2,080	.....
Sand for winter maintenance	.....	66,414	.....
Scale houses maintained	3	.....	.....
Seeding by department's forces (sq. yds.)	890,980	.....	.....
Signs erected or replaced	3,846	.....	.....
Snow fence erected, dismantled, stored	.....	.....	49.7
Traffic lights installed this year	1	.....	.....
Weed control	.....	.....	527
Zone painting on King's Highways (gals.)	8,101.7	.....	415.2
Zone painting on Secondary Highways (gals.)	857.5	.....	41.2

DISTRICT No. 14—NEW LISKEARD

R. S. CHAPMAN, P.Eng., District Engineer

Construction

The year 1962 was one of the busiest construction years in the district's history and operations were facilitated by excellent weather during the first half of the summer. This was in contrast to late August and September when very wet conditions were encountered. However, taken overall, conditions were better than average and good progress was made.

The grading and granular base contract for the first six miles of the Tri-Town By-pass, from the junction with existing Highway 11 northerly to Secondary Highway 558, was completed early in the summer. A second grading contract was let for that portion of the by-pass from Secondary Highway 558 to the north junction with existing Highway 11, and grading operations were well advanced by the time the contractor shut down early in December. By then, the substructures were completed for both the overpass at Highway 65 and the Wabi River bridge, and prestressed concrete beams erected for the overpass. Structural steel for the Wabi River bridge was not erected until March 1963, later than was originally expected, but the winter conditions encountered by the contractor were of benefit to him since he was able to work off the river ice, thereby solving some of his erection problems.

Grading on Secondary Highway 558 from the town of Haileybury westerly to the Tri-Town By-pass was started in mid-summer and by late fall the work was well advanced.

A grading contract on Highway 66 from Larder Lake easterly was completed and work started on an adjoining contract through to the Quebec boundary. This second contract will be completed by mid-summer of 1963.

On Highway 11, the top course of pavement was laid between Earlton and Englehart, thereby completing that contract, and a start was made on an adjoining grading, granular base and paving contract from Englehart northerly to the south junction with Highway 112. An additional grading, granular base and paving contract from 12.5 miles north of Highway 66 to Wavell was started and completed during 1962.

On Highway 65 east, the structure over Moose Creek was completed and a grading contract, incorporating several curve revisions, completed with the exception of trim.

On Highway 101 the substructure for the Ghost River bridge located 30 miles east of Matheson was completed and structural steel erected by late fall.

Maintenance

The spring break-up of 1962 was about average with some difficulties encountered on the gravel highways. Most notable of these was Highway 101 from Foleyet to the Shawmere River. This road was closed for several weeks, due



Highway 11—Tri-town By-pass, Wabi River (New Liskeard District).

mainly to the grading being completed in the winter and the granular not sufficiently compacted, due to the frost. The winter of 1962–63 was moderate compared to other districts and is reflected in the lower use of coarse salt and treated sand. It is interesting to note that the district screened about half of its sand requirements with its own screening plant.

The opening of Highway 101 westerly from Foleyet necessitated the formation of a new patrol located at Foleyet. To complete this patrol a yard was prepared and a new building was erected to house men and equipment.

Summer maintenance was routine in nature but the following items are of particular interest: Some 143 miles of liquid calcium for dust control, 403 miles of weed and brush spray and the relocation of 2,000 feet of snow hedge at the north end of the Tri-Town By-pass. Routine bridge repairs were carried out.

Special work includes several granular and ditching projects, the extension of four picnic sites, five acres of view clearing, 25 miles of capital mulch, illuminations of seven intersections, one new timber bridge, 62 acres of seeding on capital contracts. It is also interesting to note that pavement burning was carried out at three locations, but the section from 8 to 17 miles north of New Liskeard on Highway 11 was not successful and this resulted in a resurfacing contract in this area.

In total, 78 building permits were approved and issued.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
11	Earlton south limits to Englehart	9.9	1961	4.95	11,798
11	Englehart to South Wye	11.64	1962	5.9	14,750
11	12.5 mi. north of Hwy. 66, north to 0.5 mi. north of Wavell Road	7.29	1962	7.29	16,500
	TOTALS	28.83		18.14	43,048

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1962–63	Tons Placed 1962–63
65	3 to 6.5 mi. west of New Liskeard	3.4	3.4	5,100
66	5.5 to 11 mi. west of Hwy. 11	5.5	5.5	8,250
101W	35 to 40 mi. west of Timmins	5.0	4.6	6,900
101E	Quebec boundary westerly	4.7	4.7	7,100
560	Gowganda easterly	1.0	1.0	1,500
562	Thornloe to intersection Hwy. 571	2.6	2.6	3,100
571	Intersection Hwy. 571 northerly	2.7	2.7	3,200
577	Surface on Driftwood River bridge	0.1	0.1	130
	TOTALS	25.0	24.6	35,280

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
11	Earlton, southerly 8.8 mi	8.8	4,050

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
65	From New Liskeard westerly	3.4	10,500	235
66	From Hwy. 65 easterly	1	2,900	110
66	From Hwy. 11 westerly	5.5	16,350	380
101	From 18 to 28 mi. east of Matheson	9.7	29,300	540
101	From Timmins to Hwy. 576	4.5	13,800	310
101	From 34.5 to 39 mi. west of Timmins	4.8	14,800	350
	TOTALS	28.9	87,650	1,925

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Hwy. 65 interchange, Tri-Town By-pass	1962	.....	Reinforced concrete on prestressed beams
11	Wabi River bridge, Tri-Town By-pass.	1962	.....	Structural steel and reinforced concrete
65	Moose Creek	1961	1962	Structural steel and reinforced concrete
101	Cripple Creek	1962	1962	Structural steel on creosoted timber piles
101	Ghost River	1962	.....	Structural steel and reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	Tri-Town By-pass, Jct. old Hwy. 11 to Secondary Hwy. 558, 6.19 mi.	6.19	59,500
11	Tri-Town By-pass, Secondary Hwy. 558 to Hwy. 11, 5.77 mi.	4.0	28,500
11	Earlton south limits to Englehart (⅝ "B" shouldering only)	9.9	3,000
11	Englehart to South Wye	11.64	71,039
11	12.5 mi. north of Hwy. 66 to 0.5 mi. north of Wavell Road	7.29	84,252
65	1 mi. east and 5.4 mi. east of Hwy. 11	2.4	27,500
65	Moose Creek to 2.2 mi. west of Quebec boundary	0.7	6,000
66	Larder Lake easterly	6.29	62,300
66	From Quebec boundary, westerly 5.73 mi.	3.4	19,000
101	Ghost River, 16.3 mi. west of Quebec boundary	0.64	3,700
558	Haileybury west limits, westerly 3.95 mi.	1.6	10,600
560	Elk Lake to Tamarac Creek	.....	5,000
560	Gowganda to Hydro Creek	.....	8,000
560	Hydro Creek to Shiningtree (additional 10,000 tons stockpiled)	16	10,000
569	Throughout and Evanturel township road	.....	13,500
624	Hwy. 66 southerly	.....	8,100
	TOTALS	70.05	419,991

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	Latchford to Jct. Hwy. 569	.....	1,072
11	Jct. Hwy. 66 to Jct. Hwy. 572	.....	1,572
65	3 mi. east of Hwy. 11 to 10 mi. east	.....	1,072
65	4 mi. west of New Liskeard to 8 mi. west	3.8	6,055
65	At 0.5 mi. east of Hwy. 66	0.4	624
66	Jct. Hwy. 65 to 12 mi. east	.....	537
66	5.5 mi. west of Hwy. 11 to 11 mi. west of Hwy. 11	5.6	8,502
66	Larder Lake to Quebec boundary	.....	483
101	Quebec boundary to 5 mi. west	5.0	6,800
101	5 mi. west of Quebec boundary to 17 mi. west	.....	2,083
101	Timmins to Jct. Hwy. 576	4.2	6,896
101	40 mi. west of Timmins to 48 mi. west of Timmins	.....	4,507
558	4 mi. west of Haileybury to Montreal River	.....	1,854
560	Tamarac Creek to Temiskaming-Sudbury boundary	.....	5,500
560	Temiskaming-Sudbury boundary to Westree	.....	7,488
562	Thornloe to Jct. Hwy. 571	.....	876
562	Thornloe to Jct. Hwy. 571	2.8	3,800
564	Hwy. 11 to Boston Creek	4.5	1,379
566	Hwy. 65 to Ashley Mine	.....	1,056
567	Hwy. 11 to Loon Lake	.....	2,087
569	South Jct. Hwy. 11 to 11 mi. north	.....	961
571	Jct. Hwy. 562 northerly	2.6	4,200
575	Hwy. 101 southerly	.....	175
577	Hwy. 101 to Ansonville	.....	2,364
610	Jct. Hwy. 101 to 6 mi. east	.....	2,857
624	Jct. Hwy. 569 to Jct. Hwy. 66	.....	2,122
	TOTALS	28.9	76,922

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
New 11	Gillies Limit to Secondary Hwy. 558 (Tri-Town By-pass	6.19	1961	1.49
New 11	Tri-Town By-pass, Secondary Hwy. 558 to Jct. Hwy. 11 north of New Liskeard, 5.77 mi.	5.77	1962	4.0
65	1 mi. east and 5.4 mi. east of Hwy. 11	2.40	1962	2.4

Grading and Culverts (Cont'd)

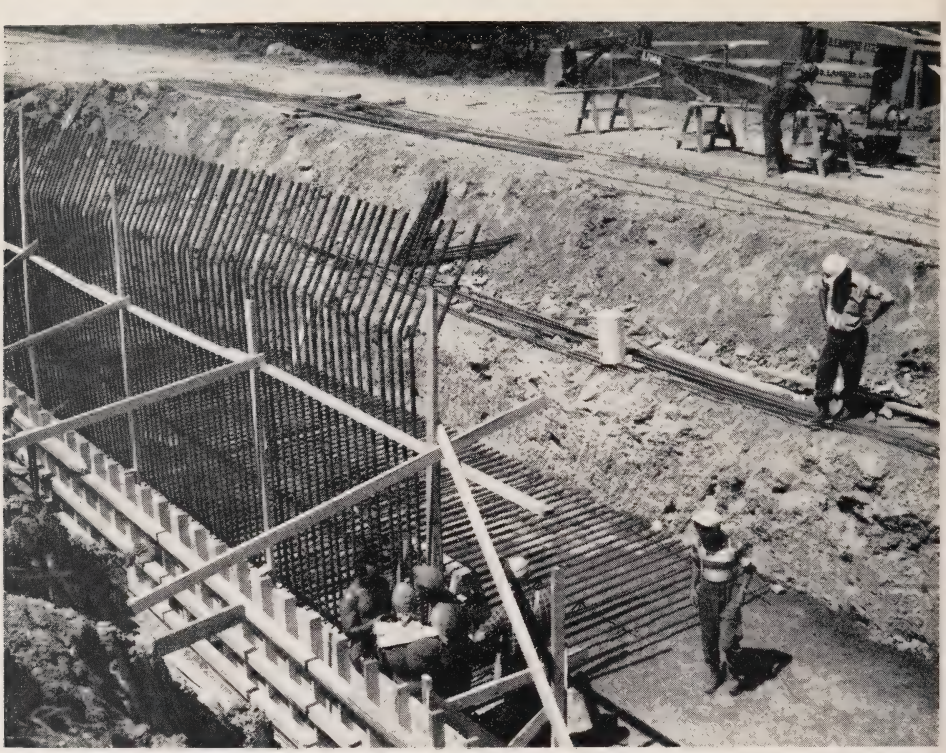
Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
65	Moose Creek, 2.2 mi. west of Quebec boundary (constructed detour only in 1961)	0.70	1961	0.7
66	Larder Lake easterly	6.29	1961	5.66
66	From Quebec boundary, westerly 5.73 mi.	5.73	1962	3.4
101	Ghost River, 16.3 mi. west of Quebec boundary	0.64	1962	0.64
558	Haileybury west limits, westerly 3.95 mi.	3.95	1962	1.6
	TOTALS	31.67		19.89

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
New 11	Tri-Town By-pass, Secondary Hwy. 558 north to Hwy. 11, 5.77 mi.	5.77	1962	4.0	197,400
65	1 mi. east and 5.4 mi. east of Hwy. 11	2.4	1962	2.4	106,700
65	Moose Creek, 2.2 mi. west of Quebec boundary	0.70	1961	0.7	27,800
66	From Quebec boundary, westerly 5.73 mi.	5.73	1962	3.4	142,100
66	Larder Lake easterly	6.29	1961	6.29	319,500
101	Ghost River, 16.3 mi. west of Quebec boundary	0.64	1962	0.64	35,500
560	Haileybury west limits, westerly 3.95 mi.	3.95	1962	1.6	75,500
	TOTALS	25.48		19.03	904,500

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
11	Englehart to South Wye	11.64	1962	11.64	56,100
11	12.5 mi. north of Hwy. 66 to 0.5 mi. north of Wavell Road	7.29	1962	7.29	67,400
65	4 mi. west of New Liskeard to 8 mi. west of New Liskeard	4.00	1962	4.00	38,400
65	12 mi. west of New Liskeard to 18 mi. west of New Liskeard	6.00	1962	6.00	30,246
66	Larder Lake to Quebec boundary	.....	.....	.....	2,856
66	10 mi. west of Hwy. 11 to 20 mi. west of Hwy. 11	10.00	1962	10.00	10,444
101	40 mi. west of Timmins to 48 mi. west of Timmins	8.00	1962	8.00	89,777
101	At Cripple Creek approaches, i.e. 21 mi. west of Timmins	0.60	1962	0.60	9,700
101	At Thunder Creek approaches, i.e. 15.5 mi. west of Timmins	0.40	1962	0.40	5,100
	Jct. Hwy. 576 to 2 mi. east				13,200
558	4 mi. west of Haileybury to 8 mi. west of Haileybury	4.00	1962	4.00	12,330
560	Tamarac Creek to Elk Lake	10.00	1962	10.00	53,430
560	Elk Lake to Temiskaming-Sudbury boundary				7,800
560	Temiskaming-Sudbury boundary to Westree	.....	.....	.....	24,146
562	Jct. Hwy. 571 easterly	.....	.....	.....	864
566	Throughout	.....	.....	.....	1,252
569	South Jct. Hwy. 11 to 11 mi. north	.....	.....	.....	21,059
577	Monteith to Ansonville	.....	.....	.....	3,517
610	Jct. Hwy. 101 to 6 mi. northwest	6.00	1962	6.00	8,174
624	Larder Lake to 16 mi. south	12.00	1962	12.00	51,786
567	Jct. Hwy. 11 to 20 mi. south	.....	.....	.....	2,145
567	Silver Centre to Loon Lake	2.00	1962	2.00	3,570
	TOTALS	81.93		81.93	513,296



Highway 11—Tri-town By-pass, bridge construction (New Liskeard District).

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
558	Tri-Town, Lot 5	Patrol garage	1962	Incompl.
11	Sesekinika	Patrol garage	1962	Incompl.
560	Gogama	Equipment storage	1962	Incompl.
560	Gowganda	Equipment storage	1962	Incompl.
101	Foleyet	Patrol garage	1961	Incompl.

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		.....	430	143
Development roads built		.....	.....	11
Off-road parks maintained		10	.....	.....
Roads snowploughed and kept open, King's Highways		.....	.....	477
Roads snowploughed and kept open, Secondary Highways		.....	.....	351
Roadside picnic places maintained		13	.....	.....
Routine maintenance, King's Highways		.....	.....	477
Routine maintenance, Secondary Highways		.....	.....	356
Salt for de-icing roads (raw)		.....	7,009	387
Salt in sand, stockpiled		.....	1,170	.....
Sand for winter maintenance		.....	23,166	648
Seeding by department's forces	(sq. yds.)	300,000	.....	.....
Signs erected or replaced		2,409	.....	.....
Snow fence erected, dismantled, stored		.....	.....	92
Snow hedges planted this year		.....	.....	0.4
Weed control	(gals.)	274	.....	403
Zone painting on King's Highways	(gals.)	4,530	.....	360
Zone painting on Secondary Highways	(gals.)	675	.....	45

DISTRICT No. 16—COCHRANE

J. D. FOSTER, P.Eng., District Engineer

Construction

The grading and granular base contracts from Porquis Junction northerly for 9.3 miles on Highway 11 and Porquis Junction easterly to Ansonville on Highway 67 for 6 miles, including Development Road 607 at Ansonville, were completed in the late fall.

Paving was carried out on Highway 11 from 10 to 20 miles south of Cochrane.

Highway 11 from Cochrane southerly for 10 miles was resurfaced. Bituminous compaction research using various roller types and rolling sequences were included in the resurfacing contract.

Due to delay in delivery of the structural steel for the Mattawishkwia River bridge on Secondary Highway 583 at Hearst, the deck and approaches of the structure were not completed during the 1962–63 fiscal year.

Maintenance

Routine maintenance was carried out throughout the district with little variation from other years.

An extensive soil stabilization programme with the use of soil saver in connection with seeding and mulching was carried out on Secondary Highway 631,



Highway 11—Matagami River Bridge at Smooth Rock Falls (Cochrane District).

giving favourable results. Also, considerable seeding and mulching was carried out in connection with new highway construction.

Two new bridges were constructed by D.H.O. forces, as well as several native timber structures replaced with arch pipes and treated timber culverts.

A new four-bay patrol garage was constructed and put into use at Nagagami and a new salt shed was built at Opasatika.

Three new non-standard weigh scales were constructed and put into use on Highway 11 at Smooth Rock Falls, Kapuskasing, and Longlac.

Winter arrived early with temperatures a little below normal, however, no serious clearing problems were encountered. Various winter works projects were undertaken with extensive clearing of right-of-way on Highway 11, Hearst to Longlac area.

Two new hydraulic sander units were received and proved most beneficial to our winter maintenance organization.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
11	Bridge approaches, Mattawishkwia River bridge	1962	.....	70
11	From 10 mi. north of Porquis Junction northerly (base course only)	1962	9.58	14,525
Secondary Highway				
583	Connecting link, Hearst (base course only)	1962	0.30	922
	TOTALS		9.88	15,517

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
11	Cochrane, 9.64 mi. southerly	9.64	11,726

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
11	Hearst westerly from 40 mi. west of Hearst to 54 mi. west of Hearst	14	39,894	1,612

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
Secondary Highway				
583	Mattawishkwia River at Hearst.	1962	.....	Concrete deck on steel sub-structure
11B	Deception Creek at Hunta	1962	1962	Concrete on laminated timber deck
Secondary Highway				
583	Jessie River bridge, 9 mi. south of Hearst	1962	1962	Laminated creosoted timber deck on steel girders
583	20 mi. south of Hearst (bridge replaced by multi-plate pipe arch)	1962	1962	Multi-plate pipe arch

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	Cochrane, 19.2 mi. south	19.2	17,473
11	Porquis Junction, 9.3 mi. north	9.3	108,217
583	Hearst to Meade	23	9,200
		Stockpiled	5,797
579	Cochrane to Gardiner	20	7,373
		Stockpiled	2,591
574	Cochrane to Norembega	18	7,197
		Stockpiled	7,797
67	Porquis Junction to Ansonville	5.95	80,050
	TOTALS	95.45	245,695

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
11	Cochrane to Porquis Junction	30.0	331
11	Cochrane to Smooth Rock Falls	40.0	208
11	Smooth Rock Falls to Kapuskasing	40.0	35
11	Kapuskasing to Mattice	40.0	1,333
11	Mattice to Hearst	20.0	400
11	Hearst to Longlac	134.9	1,978
67	Intersection Hwys. 11 and 67 to Iroquois Falls	6.6	139
Secondary Highways			
574	Cochrane to Norembega	18.0	8,734
578	Herman Lake to Montrock	6.0	2,158
579	Cochrane to Gardiner	18.0	4,584
581	Moonbeam to Remi Lake	3.5	7
583	Lac Ste. Therese to Mead	40.18	11,512
625	Jct. Hwys. 11 and 625 to Caramat	20.0	3,465
631	Jct. Hwys. 11 and 631 to Hornepayne	46.0	8,779
636	Jct. Hwys. 11 and 636 to Frederickhouse	3.0	3,655
	TOTALS	466.18	47,318

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
11	20 mi. south of Cochrane to Porquis Junction	10	1962	9
67	Porquis Junction easterly	9.3	1961	6.3
	TOTALS	19.3		15.3

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
11	Porquis Junction northerly	9.3	1962	9.3	98,936
67	Porquis Junction to Ansonville	5.2	1962	5.2	66,063
	TOTALS	14.5		14.5	164,999

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
574	Cochrane to Norembega	8	Nov. 1962	8	18,069
579	Cochrane to Gardiner	16	Nov. 1962	16	25,486
583	Lac Ste. Therese to Mead	2	Nov. 1962	2	23,191
625	Jct. Hwys. 11 and 625 to Caramat	4	Nov. 1962	4	14,529
631	Jct. Hwys. 11 and 631 to Hornepayne	2	Nov. 1962	2	6,994
	TOTALS	32		32	88,269

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11 T.C.	Nagagami	Patrol equipment storage	1961	Oct., 1962
11 T.C.	Nagagami	Housing generators	1962	Nov., 1962
11 T.C.	North side of highway, 0.5 mi. east of Smooth Rock Falls	Housing beam scales	1962	Nov., 1962
11 T.C.	North side of highway, 3 mi. west of Kapuskasing	Housing beam scales	1962	Dec., 1963
11 T.C.	North side of highway, 1 mi. east of Longlac	Housing beam scales	1962	Jan., 1963
11 T.C.	Opasatika patrol site	Salt storage	1961	.....

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,127.2	.....
Calcium for de-icing roads	.....	4.2	.....
Roads snowploughed and kept open, King's Highways	3	.....	318.60
Roads snowploughed and kept open, Secondary Highways	8	.....	146.04
Roadside picnic places maintained	17	.....	.....
Routine maintenance, King's Highways	3	.....	318.60
Routine maintenance, Secondary Highways	8	.....	146.04
Salt for de-icing roads (raw)	.....	3,367	.....
Salt in sand, stockpiled	.....	494	.....
Sand for winter maintenance	.....	7,871	.....
Scale houses maintained	2 Std. 3 Temp.	.....	.....
Seeding by department's forces (acres)	307.5	.....	.....
Signs erected or replaced	1,551	.....	.....
Snow fence erected, dismantled, stored	.....	.....	12.6
Weed control (gals.)	266	.....	172
Zone painting on King's Highways (gals.)	2,704	.....	309.28
Zone painting on Secondary Highways (gals.)	22	.....	3.2

DISTRICT No. 17—SUDBURY

T. A. SHARPE, P.Eng., District Engineer

Construction

Major construction contracts underway include heavy grading on Highway 68 from Whitefish Falls southerly for 5 miles including a structure; equipment rental for grading on Secondary Highway 639 from Algom-Quirke Mine to Jimchrist Lake (7 miles); structure and approaches over the Spanish River at Webbwood on Development Road 563; grading and granular base on Secondary Highway 545 from Capreol northerly for 13 miles to Moose Mountain Mine. These contracts are in the late stages of construction.

Several contracts were finalled during the year. These include landscaping and paving of district yard, heavy grading for 2.8 miles on Highway 68 at Whitefish Falls, grading and paving on Highway 69 from Sudbury northerly to Val Caron, a new structure over the Spanish River at Massey and one mile of new grading and paving on Secondary Highway 541A.

In addition to these contracts, several day labour and winter works projects for clearing, grading and gravelling were completed.

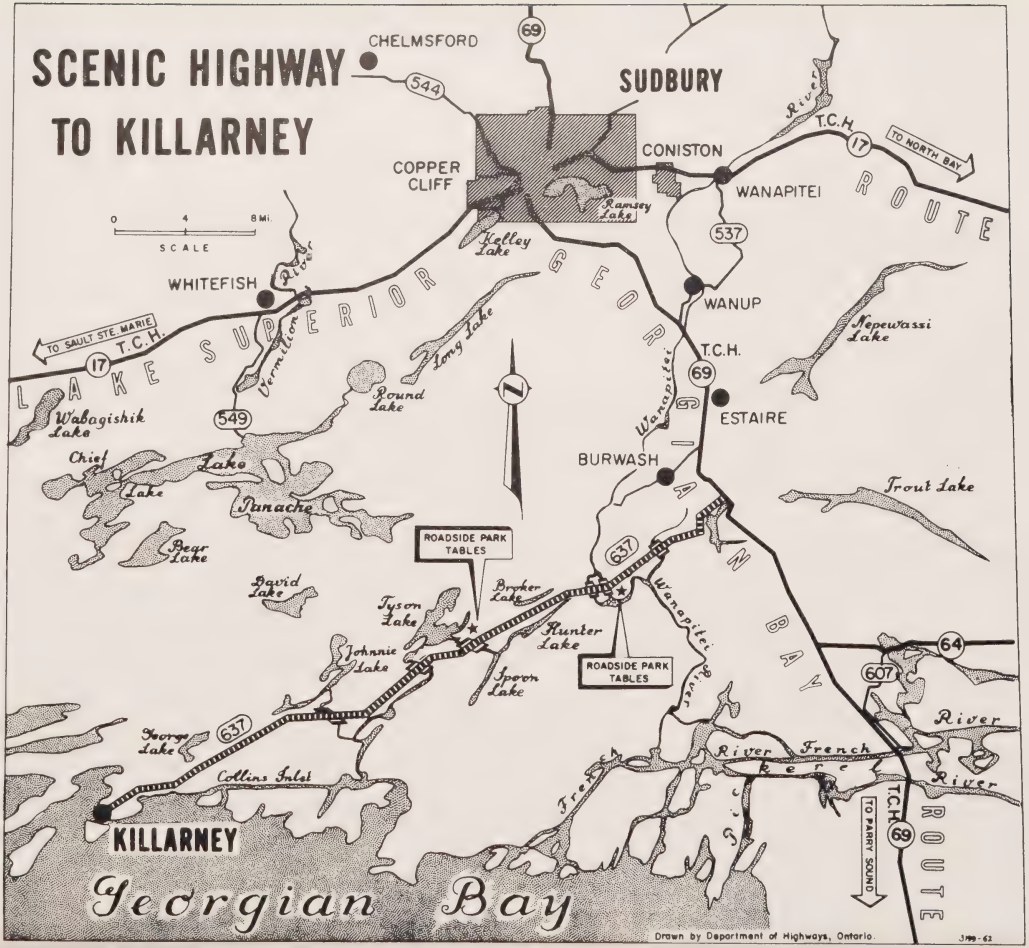
Maintenance

The past winter was abnormally severe. Additional salt had to be purchased.

The programme of shoulder stabilization was continued with the same technique of adding clay binder, mixing, watering and rolling. Satisfactory results were obtained in the vicinity of McKerrow on Highway 17, McFarlane Lake on Highway 69 and Secondary Highway 543.



Highway 68—Bridge construction, Whitefish Falls (Sudbury District).


SCENIC HIGHWAY
TO KILLARNEY
CHELMSFORD
544
69
SUDBURY
CONISTON
COPPER CLIFF
Ramsey Lake
Kelley Lake
WANAPITEI
T.C.H. 17
TO NORTH BAY
ROUTE
537
0 4 8Mi.
SCALE
WHITEFISH
Vermilion River
WANUP
Nepewassi Lake
TO SAULT STE. MARIE
T.C.H. 17
LAKE SUPERIOR
GEORGIAN BAY
Long Lake
Round Lake
T.C.H. 69
ESTAIRE
549
Wabagishik Lake
Chief Lake
Lake
Tanache
Bear Lake
BURWASH
Trout Lake
ROADSIDE PARK TABLES
637
David Lake
Tyson Lake
Barker Lake
Hunter Lake
Johnnie Lake
Spoon Lake
ROADSIDE PARK TABLES
64
607
French River
George Lake
637
Collins Inlet
KILLARNEY
Georgian Bay
T.C.H. 69
TO PARRY SOUND
ROUTE
Drawn by Department of Highways, Ontario.
3M9-62

Widening and minor re-alignment was carried out on Highway 545 from Hanmer easterly for four miles and on Highway 536 for two miles.

Continued use was made of the De-slicker. Burning was repeated on some sections burned last year in the vicinity of Estaire. The De-slicker also gave satisfactory results on Highway 69 north of Sudbury and on Highway 17 in the vicinity of Whitefish.

Traffic signals were installed in conjunction with channelization at the intersection of Highways 69 and 543.

The initial work of preparing tower sites for our two-way radio system was started. It is felt that efficiency of operations will increase when the project is completed next year.

Five additional hydraulic sanders were in use this year, resulting in a better standard for winter operations.

One 40-foot Bailey bridge was constructed on Highway 544, 5 miles west of Cartier.

Sixteen off-road parks and 13 roadside picnic places were maintained. Two new picnic sites were developed at Rock Lake and Pickerel River, both on Highway 69. Eighteen fireplaces were designed and constructed by the district for various picnic sites.

Paving and the placing of approximately 600 square yards of sod were completed at the district yard.

Most of the winter works programme was concentrated on Highway 637 which involved extensive granular lifts, re-alignment through much rock, and routine brushing. Other winter works projects consisted of brushing where required and developing picnic sites.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	O'pass Built	Flash. Lights Bell
68	C.P.R.	Mongowin Twp., West River	1	
69	C.N.R.	South of Suez	....	2
69	C.N.R.	Sudbury, old north city limits	....	4
537	C.N.R.	South of Hotrum	....	2
541	C.N.R.	North of Bailey's Corners	....	2
541A	C.N.R.	South of Falconbridge	....	2
		TOTALS	1	12

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
69	Old city limits northerly for 3.8 mi. including 1 mi. of 4 lanes	3.8	1962	3.8	18,994.13
69	3.2 mi. north of Sudbury to Val Caron (top course only)	4.06	1961	4.06	4,551.06
69	District yard (top course only)	.....	1961	.....	2,151.73
68	C.P.R. overhead, Mongowin Twp., Whitefish River bridge, Spanish River bridge at Massey (bridge deck only)	.....	1962	.....	426.19
	TOTALS	7.86		7.86	26,123.11

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
68	Ten mile point to South Baymouth	33.0	99,202	2,642
526	Hwy. 69 to Britt	2.3	6,870	158
529	Southerly from north Jct. Hwy. 69 to Hwy. 529A	12.5	34,715	952
540	Gore Bay westerly	12.3	35,685	939
549	Hwy. 17 to Lake Penage	9.2	26,640	714
551	Mindemoya to Excelsior	7.8	20,350	615
	TOTALS	77.1	223,462	6,020

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
68	Little Current north to Jonas Hill	10.7	43,459	2,564
540	Little Current west (including 802 tons sand seal)	1.5	4,625	140
542	Spring Bay Village	0.5	1,360	50
542	Mindemoya Village	1.0	2,800	95
551	Providence Bay	1.0	2,970	100
551	Mindemoya north	0.3	490	31
	TOTALS	15.0	55,704	2,980

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
68	C.P.R. overhead, Mongowin Twp., 2.3 mi. north of Whitefish Falls	1962	1962	Reinforced concrete
68	Whitefish River bridge, Whitefish Falls	1962	1962	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
68	From 9.5 mi. south of Espanola to Whitefish Falls	2.89	31,186
68	Whitefish Falls southerly	5.07	205
69	Various locations on Hwy. 69	.....	9,996
69	Sudbury old city limits, northerly	3.8	50,179
540	Gore Bay westerly	.....	11,297
541A	Diversion entrance to Falconbridge	1.0	9,689
544	Jct. Hwys. 544 and 544A to Cartier	.....	9,998
545	Hanmer easterly, Capreol northerly	.....	9,998
545	Capreol to Moose Mountain Mine gates	13.0	38,163
637	Burwash to Killarney	44.0	49,998
	TOTALS	69.76	220,709

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17 T.C.	Hagar to Blind River	147	4,469
Old 17	Whitefish to Nairn	1.5	4,640
68	Hwy. 17 to South Baymouth	80.9	17,914
69	Capreol to Pointe-au-Baril station	98.9	19,870
108	Hwy. 17 to Quirke Lake	27	1,200
537	Hwy. 69 to Wanapitei	13	2,208
538	Algoma Mills, east 4 mi. (old Hwy. 17)	4	127
540	Little Current to Meldrum Bay	89	12,154
541	Hwy. 17 to Wanapitei Lake	17	114

Crushed Gravel and Stone on Roads by Department's Forces (Cont'd)

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
542	Tehkummah to Jct. Secondary Hwy. 540	48	13,144
543	Hwy. 69 to Long Lake	5	2,139
544	Sudbury to Geneva Lake Mine	61	3,832
545	Bailey's Corners to Hanmer, Capreol to Milnet	18	85
549	Hwy. 17 to Lake Penage	9	1,641
551	West Bay to Mindemoya and Secondary Hwy. 542 to Providence Bay	11	7,806
553	Massey northerly	43	441
555	Secondary Hwy. 557 to Lake of the Mountains	5	675
557	Blind River to Lake Matinenda	14	1,548
637	Burwash to Killarney	40	10,998
	TOTALS	732.30	105,005

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
68	10.5 mi. south of Espanola to Whitefish Falls	2.89	1962	2.89
68	Whitefish Falls southerly	5.07	1962	1.93
69	Sudbury old city limits, northerly	3.80	1961	2.80
541A	Diversion entrance to Falconbridge	1.00	1962	1.00
639	Extension from Algom-Quirke Mine to Jimchrist Lake	6.83	1962	6.28
	TOTALS	19.59		14.90

Granular Base on New Grading*

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
68	10.5 mi. south of Espanola to Whitefish Falls	2.89	1962	2.89	84,900
68	Whitefish Falls southerly	5.07	1962	1.93	1,382
69	Sudbury old city limits, northerly	3.80	1961	2.80	86,683
541A	Diversion entrance to Falconbridge	1.00	1962	1.00	32,748
639	Extension from Algom-Quirke Mine to Jimchrist Lake	6.83	1962	6.28	90,000
	TOTALS	19.59		14.90	295,713

* Sand cushion plus granular "A".

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
542	From Jct. Hwys. 542 and 542A westerly	5.0	1962	4.0	48,847
545	1 mi. south of Jct. Hwy. 69 and Secondary Hwy. 545 easterly	0.5	1962	0.4	13,923
551	Intersection of Secondary Hwys. 542 and 551	0.05	1962	0.05	1,076
637	Various locations, 7 mi. east of Killarney to 15 mi. east of Killarney	8.0	1962	8.0	76,350
	TOTALS	13.55		12.45	140,196



Highway 637—Kilarney Road at Wanapitei River (Sudbury District).

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17	D.H.O. yard at Wanapitei	Salt storage	1962	Nov., 1962
17	D.H.O. yard at McKerrow	Salt storage	1962	May, 1963
544	D.H.O. yard at Chelmsford	Salt storage	1962	May, 1963
637	D.H.O. yard at Killarney (2 sheds)	Equipment storage	1962	Nov., 1962
69	D.H.O. yard at Rutter (2 sheds)	Salt and equipment storage	1963	Apr., 1963
540	D.H.O. yard at Little Current	Salt storage	1962	May, 1962
17	D.H.O. yard at Whitefish	Equipment storage	1961	Nov., 1962

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,223	364.1
Off-road parks maintained	16	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	334
Roads snowploughed and kept open, Secondary Highways	.....	.....	437
Roadside picnic places maintained	13	.....	.....
Routine maintenance, King's Highways	.....	.....	334
Routine maintenance, Secondary Highways	.....	.....	491
Salt for de-icing roads (raw)	.....	10,680	410
Salt in sand, stockpiled	.....	1,788	.....
Sand for winter maintenance	.....	47,025	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (sq. yds.)	469,480	.....	11
Shrubs received and planted this year	28	.....	.....
Signs erected or replaced	5,051	.....	.....
Snow fence erected, dismantled, stored	.....	.....	83.5
Snow hedges planted this year (trees)	2,250	.....	1.0
Traffic lights installed this year	1	.....	.....
Weed control (gals.)	374	.....	217
Zone painting on King's Highways (gals.)	6,390	.....	281.8
Zone painting on Secondary Highways (gals.)	1,492	.....	65.3

DISTRICT No. 18—SAULT STE. MARIE

J. W. MacDOUGALL, P.Eng., District Engineer

Construction

Concrete base widening, grading, drainage and hot mix paving was completed on Highway 17 from Echo Bay to Sault Ste. Marie, a distance of 12.26 miles.

Grading, culverts and granular base was completed on Highway 17 from Havilland Bay to Chippewa Falls and the placing of the hot mix base course was completed over this section.

Grading, drainage and granular base was started on Highway 17 from Chippewa Falls westerly to Secondary Highway 563 and the piles were driven for the Carp River bridge.

On Highway 550 and Highway 565 from Korah Road at Sault Ste. Marie to Pointe Aux Pins — a distance of 9.4 miles, granular base, storm sewers, curb and gutters were constructed from Korah Road to Goulais Avenue and the entire section from Korah to Pointe Aux Pins was paved.

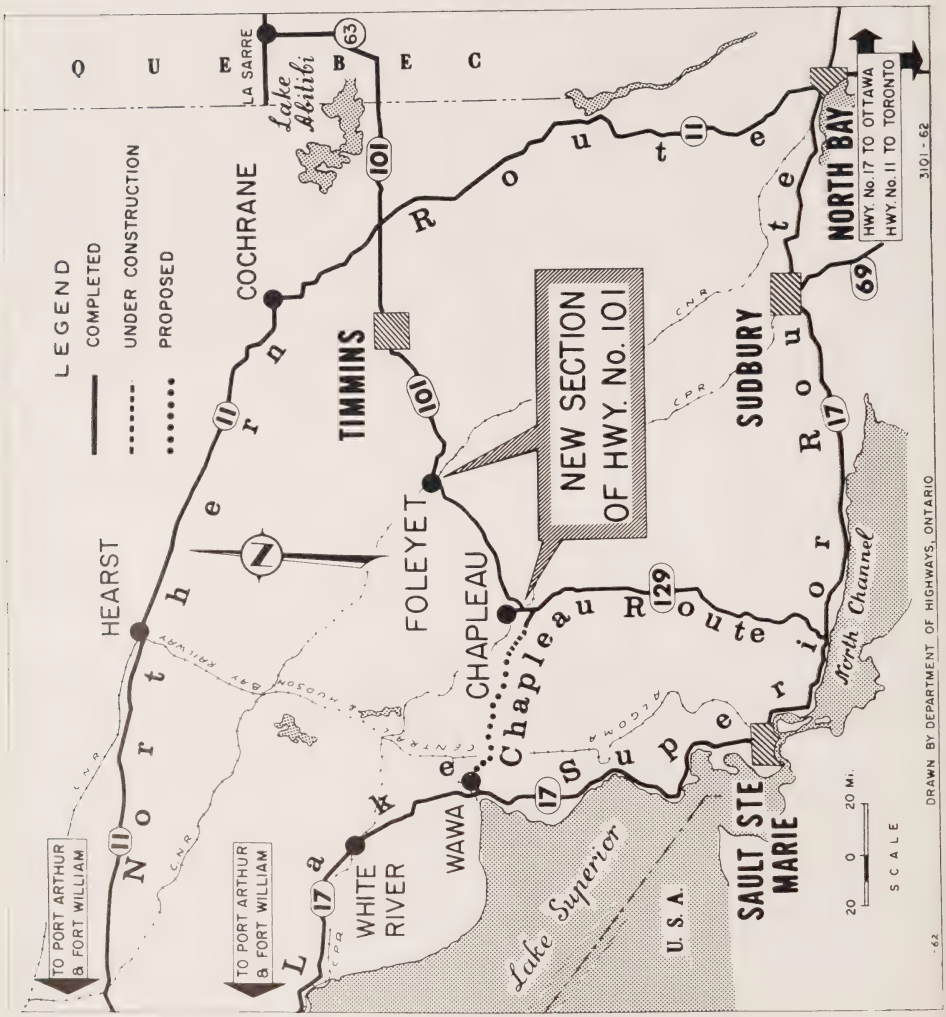
Grading, granular base and hot mix paving was completed on 2.6 miles of Secondary Highway 614 in the townsite of Manitouwadge.

Grading, drainage and granular base was completed on Highway 101 from 9.4 miles west of the junction of Highways 101 and 129, westerly 12.72 miles to Big Pine Lake.

Work was started on grading, drainage and granular base on Highway 101 from Wawa easterly towards Hawk Junction for 7.92 miles.



Resources Road, Dalton Creek (Sault Ste. Marie District).


LEGEND
COMPLETED
UNDER CONSTRUCTION
PROPOSED
QUEBEC
LA SARRE
Lake Abitibi
COCHRANE
TIMMINS
HEARST
FOLEYET
CHAPLEAU
NEW SECTION OF HWY. No. 101
Chapleau Route
Northern Route
Superior Route
SUDBURY
NORTH BAY
HWY. No. 17 TO OTTAWA
HWY. No. 11 TO TORONTO
WHITE RIVER
WAWA
Lake Superior
North Channel
SAULT STE MARIE
U. S. A.
TO PORT ARTHUR & FORT WILLIAM
TO PORT ARTHUR & FORT WILLIAM
20 0 20 Mi.
SCALE
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO
3101-62
-62

Gravelling and granular base was completed on various sections of Highway 129 for 61.5 miles north and south of Aubrey Falls.

Grading, gravelling and drainage was completed on a forestry road from Dalton, north 7.0 miles.

Maintenance

A new district garage, heated equipment, storage building, and stockroom were completed at Sault Ste. Marie, and all garage work previously split between Sault Ste. Marie and Blind River is now being carried out at Sault Ste. Marie.

Development of picnic sites and roadside parks was continued along the shore of Lake Superior, north of Sault Ste. Marie.

Work got underway for the construction of two new patrol garages, one at Batchawana and the other at Agawa. These are located on Highway 17, north of Sault Ste. Marie.

Routine maintenance was carried out in the district — such as priming, hot mix pavement patches, bridge repairs, gravelling, winter work brushing and the usual winter maintenance.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
627	C.P.R.	Heron Bay	2 flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17 T.C.	Echo Bay to Sault Ste. Marie	12.26	1962	12.26	54,010.66
17 T.C.	Havilland Bay to Chippewa Falls	9.40	1962	.....	15,014.00
550, 565	Sault Ste. Marie to airport	9.40	1962	9.4	28,582.52
614	Manitouwadge townsite	2.60	1962	2.6	5,524.74
	TOTALS	33.66		24.26	103,131.92

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles Compl. 1962–63	Tons Placed 1962–63
129	6 to 9 mi. south of Chapleau	3	4,500

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
129	Chapleau south	6	18,000	600
546	Iron Bridge north	5	15,000	500
552	Various short locations	2	6,000	200
	TOTALS	13	39,000	1,300

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
17 T.C.	Various locations from 2.7 mi. west of Thessalon bridge, westerly	24.2	3,466.91

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Harmony River bridge	1962	1962	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17 T.C.	Echo Bay to Sault Ste. Marie	12.26	89,449.78
17 T.C.	Havilland Bay to Chippewa Falls	9.40	108,501.43
17 T.C.	Chippewa Falls westerly to Carp River	.70	9,030.94
17 T.C.	Various locations from 2.7 mi. west of Thessalon bridge, westerly	24.20	2,542.30
101	From Wawa easterly toward Hawk Junction	.60	6,414.00
101	From approximately 9.4 mi. west of Jct. Hwys. 101 and 129 westerly to Big Pine Lake	5.70	33,450.92
101	12 mi. east of Chapleau to Shawmere River	16.00	29,986.39
129	North and south of Aubrey Falls	61.50	43,505.37
548	Hilton Beach southerly	15.00	8,994.15
550, 565	Sault Ste. Marie to Pointe Aux Pins	.70	7,099.34
550, 565	Korah Road in Sault Ste. Marie westerly to Secondary Hwy. 556 and Secondary Hwy. 550 southerly to Point Aux Pins	9.40	25,524.50
556	Island Lake Corner easterly	10.00	9,995.04
614	Manitouwadge townsite	2.60	10,674.51
	Totals	168.06	385,168.67

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17	Blind River to Marathon	336	6,900
101	Chapleau east and west	39	30
129	Thessalon to Chapleau	145	4,956
546	White River Road	50	365
548	St. Joseph Island	36	1,656
550	Gros Cap Road	11	454
552	Goulais Bay Road	5	40
554	Parkinson Road	11	810
556	Searchmount Road	23	1,423
561	Dunn's Valley Road	20	484
563	Batchawana Village Road	3	183
614	Manitouwadge Road	38	2,476
627	Heron Bay Road	5	42
638	Sylvan Valley Road	20	143
	Totals	742	19,962

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
17 T.C.	Echo Bay to Sault Ste. Marie	12.26	1962	12.26
17 T.C.	Havilland Bay to Chippewa Falls	9.40	1961	6.80
17 T.C.	Chippewa Falls westerly to Carp River	9.17	1962	1.90
101	From approximately 9.4 mi. west of Jct. Hwys. 101 and 129, westerly to Big Pine Lake	12.72	1961	3.18
101	From Wawa easterly toward Hawk Junction	7.92	1962	.60
	Vicinity of Dalton Mills northerly (equipment rental)	7.00	1962	7.00
550, 565	Sault Ste. Marie to Pointe Aux Pins	8.57	1961	.43
550, 565	Korah Road, Sault Ste. Marie westerly to Secondary Hwy. 556 and Secondary Hwy. 550 southerly to Pointe Aux Pins	9.40	1962	9.40
614	Manitouwadge townsite	2.60	1962	2.60
	Totals	79.04		44.17

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17 T.C.	Echo Bay to Sault Ste. Marie	12.26	1962	12.26	11,316.52
101	Wawa easterly 7.92 mi. towards Hawk Junction	7.92	1962	.48	7,600.00
550, 565	Sault Ste. Marie to Pointe Aux Pins	8.57	1960	.43	503.52
550, 565	Korah Road, Sault Ste. Marie to Pointe Aux Pins (paving)	9.35	1962	9.35	45,918.25
	TOTALS	38.10		22.52	65,340.29

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
129	North and south of Aubrey Falls	61.5	1962	51.5	128,427.14

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17	Sault Ste. Marie	Dist. repair garage, stock-room and heated storage	1961	June, 1962
17	Batchawana	Patrol garage	1962	Incompl.
17	Agawa	Patrol garage	1962	Incompl.

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads			469	
Off-road parks maintained		5		
Roads snowploughed and kept open, King's Highways				542.3
Roads snowploughed and kept open, Secondary Highways				238.7
Roadside picnic places maintained		26		
Routine maintenance, King's Highways				542.3
Routine maintenance, Secondary Highways				238.7
Salt for de-icing roads (raw)			3,937	
Salt in sand, stockpiled			2,205	
Sand for winter maintenance			66,140	
Scale houses maintained		1		
Seeding by department's forces	(sq. yds.)	1,432,640		
Signs erected or replaced		2,876		
Weed control	(gals.)	253		
Zone painting on King's Highways				426.3
Zone painting on Secondary Highways				54.7

DISTRICT No. 19—FORT WILLIAM

V. SNELL, P.Eng., District Engineer

Construction

During the construction season, this area was plagued by an abnormally high rainfall. This delayed some of our work and caused difficulty, particularly in the Pigeon River area where the material is predominantly clay.

Now that Trans-Canada work is essentially complete east of the Lakehead, our work was concentrated in four main areas west and south of Fort William.

Work progressed to very near completion on the grading and paving of the access to the new International Bridge at Pigeon River. Only some trimming work and approximately 1.4 miles of paving remains to be done there.

Between Fort William and Kakabeka Falls, we completed grading and paving of the first five miles, and made a start on the next six miles. It is hoped that the entire section can be graded and paved by the end of next season.

Work continued on the 22-mile section of Highway 17 from English River easterly. Approximately half of this section was paved with one base course this year, and grading is well under way on the remainder.

West of Atikokan work is continuing on the section 10 to 24 miles west of Atikokan. This 14-mile contract involves one structure and a large volume of rock work and also involves access problems for both the contractor and the department, in that we are constructing an entirely new road into the bush.

In our asphalt paving work some experiments were carried out, using various types of rolling equipment in various sequences. On contract 62-113, which was a 5.8-mile paving contract on Highway 17, east of Nipigon, we used a 30-ton pneumatic-tired roller for compaction research in combination with various sequences of normal asphalt rolling equipment. The Materials and Research Section maintained close watch on the operation and took tests to determine the effectiveness of this unit. On the basis of preliminary tests, the indication is that a pneumatic-tired roller improves the compaction of the hot mix, but it appears that the heavy roller may be responsible for some adverse characteristics in the finished product, such as damage to pavement edges and joints, and some rutting of the pavement.

Similar tests were carried out on two other contracts, using a 22-ton pneumatic roller, but no conclusive results are available at this time.

On grading work, increased use was made of vibratory compacting equipment and results obtained were quite good on granular materials.

No other noteworthy problems were encountered.

Maintenance

A total of one mile of low-cost bituminous resurfacing was laid by department forces on the Dorion loop, old Highway 17. Some 21,450 tons of pit run gravel was placed on Secondary Highway 608, while 20,000 tons of $\frac{5}{8}$ crushed gravel for general maintenance were produced by the department crusher.



Highway 17—Rock cut and paved shoulders, Kama Hill (Fort William District).

A new salt shed at Upsula was completed and a new 3-bay metal garage was started, also at Upsula.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
130	C.P.R.	0.5 mi. north of Hwy. 17	2 flash. lights, bell; 2 short arms, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17	T.C. 20 to 25.8 mi. east of Nipigon (base course only)	5.80	1962	5.80	9,651.86
17	T.C. East approach to Jackfish River bridge	0.08	1962	0.08	114.05
17	T.C. Little Firesteel River westerly (base course only)	11.53	1962	11.53	13,449.65
11, 17	Blind Creek culvert east of Port Arthur	0.10	1961	0.10	192.50
11, 17	Fort William city limits westerly (base and surface course except 500 feet section over new Neebing River structure)	5.12	1962	5.02	18,065.54
61	New Pigeon River bridge northerly (base and surface course)	5.46	1961	4.07	10,781.52
61	Plaza area at New Pigeon River bridge (base course only)	0.25	1961	0.25	2,025.54
	TOTALS	38.34		26.85	54,280.66



Highway 61—New Pigeon River Bridge near U.S. border (Fort William District).

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
11A	From Jct. Hwy. 11, 15.2 mi. east	15.2	30,082	1,560
585	From Jct. Hwy. 11, 24 mi. north	24.0	56,825	2,825
587	Silver Islet Loop (13 mi.: two applications)	26.0	32,112	1,234
588	Jct. Hwy. 11, 1½ mi. west	1.5	2,737	165
588	Jct. Hwy. 590, 1.3 mi. east and west	1.3	2,400	136
589	Jct. Hwy. 11A, end of Hwy. 589	19.0	30,886	2,250
590	Jct. Hwy. 588, 14.8 mi. north	14.8	30,429	1,243
590	Jct. Hwys. 130 and 11 at Kakabeka Falls	11.0	20,196	1,225
591	Jct. Hwy. 589, 5.2 mi. west and north	5.2	10,000	720
595	Jct. Hwy. 608, 1 mi. north	1.0	200	100
595	Jct. Hwy. 588, Jct. Hwy. 590	8.0	16,364	933
	TOTALS	127.00	232,231	12,391

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1962–63	Tons Placed 1962–63
Old 17	Dorion Loop	1.0	4,691.77

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
580	Leitch Mine, Lake Nipigon	3.0	7,769	337

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11, 17	Neebing River, 1.17 mi. west of Fort William city limits	1962	1962	Rigid frame, box 21 feet and 1 inch
61	New Nipigon River International Bridge, 43 mi. south of Fort William.	1961	.....	Steel girders and concrete slab

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17 T.C.	From Little Firesteel River westerly 11.53 mi.	11.53	107,223.43
17 T.C.	From Little Firesteel River westerly 11.53 mi.	11.53	23,129.32
17 T.C.	From English River easterly 10.4 mi.	10.40	9,706.68
17 T.C.	Nipigon easterly from 20 to 25.84 mi. east	5.84	7,220.44
11, 17	Port Arthur easterly from 8.6 to 11.2 mi. east	2.60	1,981.19
11, 17	Fort William city limits westerly 5.12 mi.	5.12	82,420.35
11, 17	From Hwy. 130 westerly 6.03 mi.	6.03	17,777.71
61	New Pigeon River International Bridge northerly	5.71	98,385.50
584	Geraldton town limits northerly to Murky Creek (additional 5,000.17 tons in stock pile)	20.00	14,999.64
	TOTALS	78.76	362,844.26

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17	0.5 mi. west of Jct. Hwys. 11 and 17, Shabaqua } (Stockpiled)	.....	13,438
17	11 mi. west of Jct. Hwys. 11 and 17, Shabaqua }	.....	6,645.22
584	Various locations on Nakina Road	25.0	3,375
623	From Hwy. 11 to C.N.R. crossing	2.1	3,441
	TOTALS	27.1	6,816

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
17 T.C.	From Little Firesteel River westerly 11.53 mi.	11.53	1961	5.53
17 T.C.	From English River easterly 10.4 mi.	10.40	1962	2.50
11, 17	Port Arthur easterly from 8.6 mi. to 11.2 mi. east	2.60	1962	2.60
11, 17	Fort William city limits westerly 5.12 mi.	5.12	1962	5.12
11, 17	From Hwy. 130 westerly 6.03 mi.	6.03	1962	1.50
11	From 10.0 mi. to 23.9 mi. west of Atikokan	13.90	1962	5.00
61	New Pigeon River International Bridge, northerly 5.71 mi.	5.71	1961	4.71
588	Jct. Secondary Hwys. 588 and 595 westerly 0.57 mi.	0.57	1961	0.42
	TOTALS	55.86		27.38

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17 T.C.	Little Firesteel River westerly 11.53 mi.	11.53	1961	5.53	188,635.55
17 T.C.	English River easterly 10.40 mi.	10.40	1962	2.50	122,450.00
11, 17	Fort William city limits westerly 5.12 mi.	5.12	1962	5.12	152,388.77
11, 17	Jct. Hwy. 130 westerly 6.03 mi.	6.03	1962	1.50	63,860.61
11	From 10.0 mi. to 23.9 mi. west of Atikokan.	13.90	1962	0.40	8,326.86
61	New Nipigon River bridge northerly 5.71 mi.	5.71	1961	4.21	356,696.01
	TOTALS	52.69		19.26	892,357.80

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
608	Approximately 2 mi. west of Jct. Hwy. 397, 3 mi. east	5	1962	5	21,445.52

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	Lot 5, Con. 3, Upsala	Salt storage	1961	July, 1962
17 T.C.	Lot 5, Con. 3, Upsala (3-bay metal garage by D.P.W.)	Patrol garage	1962	Incompl.

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Bridges painted (309 gals.)		2		
Calcium dust layer on gravel roads			718	120
Calcium for de-icing roads			30	
Off-road parks maintained		21		
Roads snowploughed and kept open, King's Highways				580
Roads snowploughed and kept open, Secondary Highways				530
Roadside picnic places maintained		14		
Routine maintenance, King's Highways				580
Routine maintenance, Secondary Highways				390
Salt for de-icing roads (raw)			4,200	
Salt in sand, stockpiled			1,200	
Sand for winter maintenance			21,225	
Scale houses maintained		2		
Seeding by department's forces	(sq. yds.)	1,006,720		
Signs erected or replaced		3,400		
Snow fence erected, dismantled, stored				20
Weed control, brush control				890
Zone painting on King's Highways	(gals.)	6,447		608
Zone painting on Secondary Highways	(gals.)	396		33

DISTRICT No. 20—KENORA

C. R. ROBERTSON, P.Eng., District Engineer

Construction

With the completion of the high level bridge on the causeway across Rainy Lake, consisting of 6,900 lineal feet of rock grading on the mainland and islands; 7,900 feet of rock fill causeway in water depths up to 50 feet; 4,400 feet of bridging on steel tube piles (three bridges) and some 200 feet of timber bridging now provides highway access to the east side of Rainy Lake.

A floating glancing boom structure constructed to facilitate pulp towing under the high level bridge at the causeway broke up during a violent storm. This structure consisted of a row of 35 shackle-jointed steel drums, 37.5 feet long by four feet in diameter, anchored to concrete blocks. A new replacement design incorporates grout ballast in each drum, with truck tires suspended at the drum ends to absorb any shock.

To the east of the causeway, on Highway 11, work proceeded on two rock grading contracts totalling 22 miles. The concrete deck was placed on the Windy Point bridge before winter, eliminating the use of a temporary timber bridge constructed across Windy Point Narrows by the contractor.

West, on Highway 11, the Pinewood River bridge was started. This design incorporated precast, prestressed concrete cap boxes and girders, eliminated from



Highway 105—D.H.O. asphalt plant, Red Lake (Kenora District).

the causeway bridges when two proposed spans were replaced with rock fill. The Pinewood River bridge contractor pushed earth onto the river at the pier locations and worked from the frozen earth and ice this past winter to drive piles and erect pier cap boxes and girders.

At Dryden, on Trans-Canada Highway 17, the grading work proceeded on two contracts from 10 miles east to eight miles west of the town.

The Thunder Creek bridge was completed and opened to traffic.

The existing Wabigoon River bridge was to be raised intact approximately 17 feet and moved laterally a distance of 40 feet, with consequent improvement in approach alignment. However, due to the weight of concrete in the deck, the contractor chose to remove the concrete deck and replace it after shifting the truss.

Rock grading work continued on a six-mile contract on Trans-Canada Highway 17 west from the junction of Highways 17 and 71.

With the completion of an 11-mile paving contract the section of Trans-Canada Highway 17 from Longbow Corners to Vermilion Bay has now been constructed and paved to Trans-Canada Highway standards.

On Highway 105 grading work progressed on a 15-mile equipment rental contract north of the Trout River bridge to prepare the highway for paving by the Department of Highways' asphalt plant.

Maintenance

Highway mileage in Kenora District was increased by the addition of 13 miles of Tertiary Road 804.

Our asphalt plant completed the grading of Highway 125 (8.7 miles), Highway 618 (8.9 miles) and 12.5 miles of Highway 105 and paved these areas with a 20-foot width of 3 inches thick hot mix paving.



Highway 11—Rainy River Causeway, high-level span (Kenora District).

Our day labour forces throughout the district completed grading, drainage and granular base work, totalling 23 miles on Highways 116, 594, 601, 602, 609. In addition our bridge crew erected a double-single Bailey bridge on Highway 128 at Redditt, and two steel beam, timber pile and deck structures on Highways 621 and 600 near Berglund. Six miles of Highway 128 north of Kenora and all of Highway 621 was primed and surface treated, and in both instances an acceptable hard surface has been obtained.

Two new weigh scales were constructed, including the grading at intersection of Highway 105 and Highway 125, and on Highway 17, approximately six miles west of Kenora. The weigh scale at Vermilion Bay was reconstructed to accommodate single-axle scales. Salt sheds were constructed at Ear Falls and Red Lake patrol yards.

Maintenance contracts for 5/8-inch crushed gravel were let and completed for about 95,000 tons throughout the district. Three bridges, located at Frog Rapids, Highway 72, and Winnipeg River (west branch) and Keewatin Channel on Highway 17, were painted by contract.

Our winter work projects consisted of clearing and brushing of the right-of-way and a few minor rock cuts and ditching projects. In addition we pre-fabricated five salt sheds for use throughout the district and erected three.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
594	C.P.R.	At Eagle River, District of Kenora, Aubrey Twp.*	
596A	C.P.R.	Kenora District, Pellatt Twp.*	
613	C.N.R.	At Devlin, Rainy River District, Devlin Twp.	X
619	C.N.R.	At Pinewood, Rainy River District, Dilke Twp.	X
621	C.N.R.	At Sleeman, Rainy River District, Worthington Twp.	X

* 2 flashing lights, 2 short arms and one bell.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17 T.C.	19 mi. east of Longbow Corners, easterly	11.08	1962	11.08	18,012
105	Red Lake southerly to Stone River	11.50	1962	11.50	26,892
116	Jct. Hwy. 72 to Jct. of Pinetree Radar Base Road	3.12	1962	3.12	7,309
125	Jct. Hwy. 105 to Cochenour dock	9.00	1962	9.00	19,089
618	Jct. Hwy. 105 to Starratt Olson Mine	8.60	1962	8.60	18,057
	TOTALS	43.30		43.30	89,359

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Sand Used 1962–63
128	Kenora town limits northerly	5.5	18,600	396
621	From Gameland to Lake of the Woods Park	14.0	45,301	1,212
	TOTALS	19.5	63,901	1,608



Highway 11—Rainy River Causeway, high-level span (Kenora District).

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1962–63	Gals. Bit. Used 1962–63	Tons Chips Used 1962–63
128	Kenora town limits northerly	5.5	29,000	1,284
621	From 8 mi. north of Sleeman	23.6	72,008	2,682
	TOTALS	29.1	101,008	3,966

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Thunder Creek bridge	1961	1962	Steel and concrete
128	Black River bridge	1962	1962	Double-single Bailey
11	High level, Rainy Lake causeway	1960	1962	Steel and concrete
11	Windy Point	1961	1962	Steel and concrete
600	Rainy River district	1962	1962	Steel beams, timber piles and deck
621	Berglund, Rainy River district	1962	1962	Steel beams, timber piles and deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
72	Jct. Hwy. 17 (Dinorwic) to Patricia Corners	37.60	10,000
116	Jct. of Pinetree Radar Base Road to Hudson	6.88	5,000
128	Kenora north limits to Redditt	17.80	4,903
Secondary Highways			
594	Dryden to Eagle River	21.00	10,000
601	Jct. Hwy. 17 (east branch) to Jct. Hwy. 17 (west branch)	16.10	8,000
602	Fort Frances west limits to Jct. Hwys. 11 and 71, Emo	29.20	9,940
609	Jct. Hwy. 105 to Clay Lake	9.80	8,034
613	Jct. Secondary Hwy. 602 (Big Fork) to Lake Despair	25.50	5,000
	TOTALS	163.88	60,877

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1962–63	Tons Placed 1962–63
17 T.C.	English River to Manitoba boundary	222.77	6,723
71	Jct. Hwy. 17 (Longbow Corners) to Jct. Hwy. 11	96.61	664
72	Jct. Hwy. 17 to Sioux Lookout	43.20	891
105	Jct. Hwy. 17 to Ear Falls	63.70	2,904
116	Jct. Hwy. 17 to Hudson	10.00	739
119	Jct. Hwy. 17 to Richan	13.01	201
128	Kenora north limits to Redditt	17.80	1,708
Secondary Highways			
594	Dryden south limits to Jct. Hwy. 17	22.60	18
596	Darlington Bay bridge (Keewatin) to Minaki	32.40	1,510
596A	Jct. of Secondary Hwy. 596 to Jct. Hwy. 17	9.80	38
600	Jct. Hwy. 71 to Rainy River	59.00	4,682
601	Jct. Hwy. 17 to end of road	16.10	1,021
602	Fort Frances to Jct. Hwy. 11, Emo	30.80	77
603	Jct. Hwy. 17 to Dyment	3.10	48
604	Kenora east limits to Jct. Hwy. 128	16.50	35
605	Jct. Hwy. 17 to end of road	7.50	36
609	Jct. Hwy. 105 to Clay Lake	9.80	29
611	Jct. Secondary Hwy. 602 to end of road	12.70	1,051
613	Jct. Secondary Hwy. 602 to Lake Despair	25.50	5,666
615	Burditt Lake to Jct. Hwy. 71	12.50	92
617	Jct. Hwy. 11 (Stratton) to Jct. Secondary Hwy. 600	14.40	1,188
618	Jct. Hwy. 105 to Starratt Olson Mine	7.20	23
619	Pinewood to Jct. Secondary Hwy. 621	25.50	1,903
621	Jct. Hwy. 11 (Sleeman) to Lake of the Woods	32.90	240
	TOTALS	805.39	31,487

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63
17 T.C.	Dryden westerly to Oxdrift	7.36	1962	5.58
17 T.C.	Dryden easterly	10.44	1961	8.83
17 T.C.	19 mi. east of Longbow Corners easterly	11.08	1960	.08
17 T.C.	Longbow Corners westerly	5.73	1961	4.13
116	Jct. Hwy. 72 to Jct. of Pinetree Radar Base Road	3.12	1961	1.12
11	Rainy Lake causeway (east end), easterly	10.39	1961	7.31
11	From 10.4 mi. east of Rainy Lake causeway, easterly	12.43	1962	2.96
105	From 12 mi. to 27 mi. south of Red Lake	15.00	1962	9.67
	TOTALS	75.55		39.68

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17 T.C.	19 mi. east of Longbow Corners, easterly	11.08	1960	.08	49,380
17 T.C.	Dryden westerly to Oxdrift	7.36	1962	5.58	434,275
17 T.C.	Dryden easterly	10.44	1961	8.83	649,874
17 T.C.	Longbow Corners westerly	5.73	1961	4.13	198,789
105	From 12 mi. to 27 mi. south of Red Lake	15.00	1962	9.67	121,278
116	Jct. Hwy. 17 to Jct. of Radar Base Road	3.12	1961	1.12	10,760
11	Rainy Lake causeway (east end), easterly	10.39	1961	7.31	89,457
11	From 10.4 mi. east of Rainy Lake causeway, easterly	12.43	1962	2.96	9,805
	TOTALS	75.55		39.68	1,563,618

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1962–63	Tons Placed 1962–63
17	English River to Manitoba boundary	222.77	1962	222.77	5,084
71	Jct. Hwy. 17 (Longbow Corners) to Jct. Hwy. 11	96.61	1962	96.61	1,570
105	Jct. Hwy. 17 to Ear Falls	63.70	1962	63.70	485
119	Jct. Hwy. 17 to Richan	13.01	1962	13.01	688
128	Kenora north limits to Redditt	17.80	1962	17.80	597
Secondary Highways					
594	Dryden south limits to Jct. Hwy. 17	22.60	1962	22.60	578
596	Darlington Bay bridge (Keewatin) to Minaki	32.40	1962	32.40	3,742
596A	Jct. Secondary Hwy. 596 to Jct. Hwy. 17	9.80	1962	9.80	335
600	Jct. Hwy. 71 to Rainy River	59.00	1962	59.00	2,135
601	Jct. Hwy. 17 to end of road	16.10	1962	16.10	675
602	Fort Frances to Jct. Hwy. 11, Emo	30.80	1962	30.80	1,152
604	Kenora east limits to Jct. Hwy. 128	16.50	1962	16.50	1,400
605	Jct. Hwy. 17 to end of road	7.50	1962	7.50	362
609	Jct. Hwy. 105 to Clay Lake	9.80	1962	9.80	645
611	Jct. Secondary Hwy. 602 to end of road	12.70	1962	12.70	327
613	Jct. Secondary Hwy. 602 to Lake Despair	25.50	1962	25.50	280
615	Burditt Lake to Jct. Hwy. 71	12.50	1962	12.50	7,793
617	Jct. Hwy. 11 (Stratton) to Jct. Secondary Hwy. 600	14.40	1962	14.40	685
619	Pinewood to Jct. Secondary Hwy. 621	25.50	1962	25.50	2,590
621	Jct. Hwy. 11 (Sleeman) to Lake of the Woods	32.90	1962	32.90	1,653
	TOTALS	741.89		741.89	32,776

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11	Stratton patrol yard	Salt shed	1962	1962
71	Patrol yard, approximately 3 mi. south of Finland	Salt shed	1962	1962
105	Ear Falls patrol yard	Salt shed	1962	1962
105, 125	Patrol yard, Red Lake vicinity	Salt shed	1962	1962
621	Berglund patrol yard	Salt shed	1962	1962
105, 125	Jct. Hwys. 105 and 125	Weigh scale house	1962	1962

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Bridges painted (623 gals.)		3	.....	.....
Calcium dust layer on gravel roads		.....	1,534	.....
Off-road parks maintained		19	.....	.....
Roads snowploughed and kept open, King's Highways		9	.....	582.96
Roads snowploughed and kept open, Secondary Highways		18	.....	349.30
Roadside picnic places maintained		12	.....	.....
Routine maintenance, King's Highways		.....	.....	582.96
Routine maintenance, Secondary Highways		.....	.....	349.30
Salt for de-icing roads (raw)			1,737	.....
Salt in sand, stockpiled		.....	1,858	.....
Sand for winter maintenance		.....	24,916	.....
Scale houses maintained		4	.....	.....
Seeding by department's forces	(acres)	120	.....	.....
Signs erected or replaced		2,334	.....	.....
Snow fence erected, dismantled, stored		.....	.....	55.2
Weed control		.....	.....	363.2
Zone painting on King's Highways	(gals.)	5,036	.....	323.5
Zone painting on Secondary Highways	(gals.)	438	.....	15.9

PLANNING AND DESIGN BRANCH

JOHN WALTER, P.Eng., *Director of Planning and Design*

PLANNING DIVISION

W. Bidell, P.Eng., *Planning Engineer*

Functional Planning Section

I. C. Campbell, P.Eng., Functional Planning Engineer

The Functional Planning Section was formed in the summer of 1962 for the main purpose of preparing planning reports for work projects. The section previously known as the Location Section was divided into two groups, with the photogrammetric, field surveying and plan preparation units attached to Engineering Surveys and the grade and intersection units attached to Functional Planning. Staff was added from other sections of the department to augment the Functional Planning section.

The previous method of processing work projects (i.e. by sending out plans and profiles with a design based on criteria supplied by the Program Section) was replaced by a new type of functional report, size 11" x 17", which includes the following information:

(a) Problem
(b) Recommendations
(c) Accident records
(d) Traffic data
(e) Schedule information
(f) Design criteria
(g) Proposed schemes
(h) Cost estimates
(i) Soil data
(j) Drainage
(k) Structures
(l) Intersection design
(m) Utilities
(n) Property
(o) Municipal resolutions
(p) Plan and profile
(q) Cross sections

The purpose of this method of processing work projects is to produce a report that has the preliminary approval of the Property Section, the Road Design Branch, the Bridge Office, the Soils Branch and the district concerned as well as agreements with any municipalities involved.

The normal non-project work was retained by the Functional Planning Section such as intersection detailing, property requests and sales, subdivision plan recommendations, applications, assumptions, etc. Design plans for future work projects form a considerable part of this non-project work.

It is the intention to decentralize this section into Regions as quickly as possible. The Southwestern Region now exists in London, the Northern Region is expected to move to North Bay in August, 1963, and the Eastern Region should be in Kingston within a year.

Head Office Functional Planning Subsection

P. J. Harvey, P.Eng., Functional Planning Review Engineer

This group consists of four units: two project groups whose duty it is to review the work of the four regions, an intersection design group to design and detail the intersection schemes submitted by the regions and a right-of-way

group to handle property sales, property requests, subdivision plans and official plans.

Besides the review of all reports and projects processed by the regions, this group worked on specific problems concerning all regions such as (a) a design for median cross-overs on four-lane highways; (b) method for establishing a criteria sheet for the assumption and designation of highway; (c) preparation of standards for highway and interchange design, and (d) a method of producing functional planning reports.

A summary of the work processed by the Head Office Group is as follows:

Project Groups

Functional reports reviewed	7
Functional reports in preparation	3
Preliminary functional reports reviewed	35
Miscellaneous reports prepared	2
Miscellaneous reports in preparation	3
Work projects reviewed (including structures)	170
Non-work projects reviewed	49
Design criteria prepared	7
Design criteria reviewed and revised	93
Assumptions, designations and reversions	105

Intersection Design Group

Interchanges	32
Channelizations	54
Service road designs	1
Truck climbing lane designs	4
Minor intersections	40
Miscellaneous projects	32
Property sales processed	40
Property requisitions	Nil
Applications	87
Patrol yards and O.P.P. sites	16

Right-of-Way Group

Property requests (plotted and reviewed)	580
Property requests (initiated or approved)	365
Property sales	1065
Plans of subdivisions: Plotted	470
Reviewed	195
Description reference plan	45
Official plans	12

Central Region Functional Planning Subsection

R. G. Burnfield, P.Eng., Regional Functional Planning Engineer

The Central Region, comprising of the Hamilton, Toronto and Port Hope Districts, involves the heaviest volume as well as the most complex designs in the Functional Planning Section.

Of the numerous projects completed and issued during the past year, the following are of particular interest:

1. Functional report on C.A.H. 401 from Highway 27 to Highway 48.
2. Functional report on C.A.H. 406 from St. Catharines to Welland.
3. The first official reports issued by the Functional Planning Section—
   (a) Hwy. 99 from the junction of Hwy. 24 easterly 2.7 miles,
   (b) Hwy. 35, Gull River Bridge at Coboconk.

In all, 17 special reports were prepared, including those listed, and 93 work projects both grading and structures were issued.

The following table is a summary of work completed during 1962-63:

	DISTRICTS		
	Hamilton	Toronto	Port Hope
Functional reports	2	1	1
Special reports	6	6	1
Grading work projects completed	8	22	8
Grading in progress	8	11	8
Interchanges—completed	12	22	....
Channelization	5+1	11	6
Structures — completed and in progress	24	25	11
Non-work projects	185	206	97
Applications			330
Property sales and requests			45
Road closings, transfers, reversions			48
Assumptions and designations			13

Southwestern Region Functional Planning Subsection

W. R. Kinnear, P.Eng., Regional Functional Planning Engineer

The Planning Branch has been represented in the Southwestern Region at London since July, 1959. The work handled by this region is exceeded in volume only by the Central Region, as it comprises four districts: Chatham, London, Stratford and Owen Sound.

Some of the more interesting projects considered during the fiscal year 1962-1963 are as follows:

1. Design for the Sarnia By-pass (Highway 40A), including the Modeland Road interchange.
2. Relocation of Highway 24 from Brantford to Simcoe.
3. Conservation projects at Parkhill and St. Mary's.

A summarized account of the total work accomplished is as follows:

	DISTRICTS			
	Chatham	London	Stratford	Owen Sound
Functional Reports				
Completed	1	....	....	....
In progress	1	2	5	7
Grading Work Projects				
Completed	1	10	10	3
In progress	5	4	2	1
Interchanges				
Completed	1			
In progress	....	2		
Channelizations				
Completed	7	7	6	4
In progress	1	12	1	1
Structure Projects				
Completed	4	3	6	6
In progress	6	5	....	
Non-work Projects				
Completed	4	5	5	3
In progress	4	9	2	1

Applications	257
Assumptions	38
Closings	13
Transfers	11
Property requests	163
Property sales	43

Northern Region Functional Planning Subsection

J. A. Knowles, P.Eng., Regional Functional Planning Engineer

The Northern Region, at present stationed in the Downsview office, is responsible for the functional planning work in the Huntsville, North Bay, Sudbury and New Liskeard districts.

During the 1962–63 fiscal year, the following jobs, worthy of special notice, were completed:

1. Highway 11 — Sparrow Lake Road, northerly 3.6 miles, in Huntsville District.
2. Sec. Hwy. 544 — Cartier to Levack, Sudbury District.
3. Sec. Hwy. 624 — Blanche River Bridge, New Liskeard District.

The following table is a summary of the jobs completed and in progress:

	DISTRICTS			
	Huntsville	North Bay	New Liskeard	Sudbury
Functional Reports				
Completed	...	...	....	...
In progress	10	4	1	3
Grading Work Projects				
Completed	...	2	....	2
In progress	....	1	2	
Channelizations				
Completed	4	5	3	2
Structures				
Completed	....	1	....	...
Non-work Projects				
Completed	4	1	....	3
Miscellaneous Jobs	....	1	...	....

Applications	50
Assumptions and designations	2
Property requests	2
Property sales	22

Eastern Region Functional Planning Subsection

R. Gascoyne, P.Eng., Regional Functional Planning Engineer

The Eastern Region is responsible for the functional planning work in the Kingston, Ottawa and Bancroft districts. This work, during 1962–63, consisted of all types of highway design from park access roads to four-lane controlled-access highways.

The Brockville–Gananoque section of C.A.H. 401 neared completion from a design standpoint, as the alignment was laid down and numerous interchanges detailed. Seven structures on this section were submitted to the Bridge Office for design.

The following table is a summary of the jobs completed and in progress:

	DISTRICTS		
	Kingston	Ottawa	Bancroft
Functional reports			
Completed			
In progress	2	1	3
Grading Work Projects			
Completed	9	2	2
In progress	5	3	8
Interchanges			
Completed	3	....	
In progress	....	1	
Channelizations			
Completed	5	4	1
Structures			
Completed	7	....	2
In progress	2	2	1
Non-work Projects			
Completed	1	2	1
In progress		4	
Miscellaneous Jobs	2	2	1
Applications			119
Assumptions and designations			2
Property requests			7
Property sales			46

Traffic and Planning Studies Section

W. Q. Macnee, P.Eng., Traffic Engineer

Planning Studies Subsection

Area Transportation Studies

During recent years it has become apparent that the planning of specific and isolated road works has left many unanswered questions that are directly and indirectly associated with the original problem. The effects and ramifications of undertaking specific action on the results of these limited studies have, in some cases, resulted in undesirable situations. There has been a lack of co-ordinated and integrated highway planning, not only in and around the larger municipalities but also in some of the more sparsely populated areas. The program of Urban Transportation Studies initiated about 1957 partially eliminated this problem but did not consider the broad planning concepts of inter-urban facilities.

In 1962 the Traffic Section was reorganized into the Traffic and Planning Studies Section for the purpose of correcting this deficiency in area highway planning. A study area will encompass 1000 to 8000 square miles and will formulate a concept of the present and future major road network for the area.

Eighteen such study areas have been designated and already work is well advanced in the Niagara Peninsula and in the area between Toronto and Hamilton. As work progresses, and study methods and techniques become more refined, it is hoped that three area studies per year can be undertaken. At the present time area studies in the London vicinity, the Cornwall Ottawa area and the area north and east of Metropolitan Toronto are contemplated for 1963.

Once the area study has established the planning concept for the road network, only then will additional specific studies provide the necessary detailed data for particular planning and design problems.

Urban Transportation Studies

The traffic studies of urban municipalities, begun in 1957, have continued throughout the year. These studies provide recommendations for present and future improvements required in the street network to satisfy adequately the traffic demand. A priority and construction program for road needs is provided in five-year stages up to twenty years into the future.

During the year, studies were completed for the cities of Sault Ste. Marie, Oshawa, Peterborough, Woodstock and Chatham. Studies were also conducted in Windsor, Barrie, Hamilton, Brantford, Niagara Falls, Kingston and Cornwall.

Specific Studies

Traffic work of a more specific nature, involving by-pass studies, capacity and potential volume studies of road sections and intersections, was carried out. Over eighty requests for present and potential traffic volumes for varying projects were received with approximately seventy requests being completed. As an example, a traffic study of the North Bay by-pass was conducted to determine whether the by-pass and the feeder highways serving it are adequate and suitably located to handle traffic demands for a twenty-year planning period. Recommendations were made as to where access should be permitted, where widening will be required and where road closings should be effected.

Also in the realm of specific studies was the determination of the re-design concepts and principles for Highway 27 from the Q.E.W. to Highway 401. Such work required considerable technical skill and co-ordination with the Metro Planning Board in order to interpret the appropriate planning and traffic data before and after it was applied to the computer. The results of this study have now been analyzed and are serving as the criteria for the functional re-design of Highway 27.

Other Work

Thirteen origin-destination surveys with 258,800 interviews were conducted to provide information on traffic patterns and desires relative to various problems. In keeping with the expanded scope of the work, there has been a change in analysis techniques. More importance is being attached to the inter-relationship between travel patterns and land use characteristics for trip projection.

At the present time twenty electronic computer programs are used in the processing of traffic planning data — six of the programs having been developed this year. These are a basic analysis program, total vehicle miles and total vehicle minutes program, diversion assignment program, table compiling program, trip length distribution program and a minimum path output revision program.

Requests were received from municipalities, organizations, members of parliament and various individuals asking that the department assume roads as King's Highways, Secondary Highways or Tertiary Roads. Fifty-five planning studies were undertaken and recommendations made for assumption or justification provided for denial of the request.

An overall study of Secondary Highways has been started that will investigate a basic policy for Secondary Highways and will make recommendations for assumptions into the Secondary Highway system and reversions back to local municipalities.

Traffic Control Subsection

Two further steps were taken toward complete regionalization when traffic control subsections were formed to cover the Central and Eastern Regions. These groups began operations in August and October respectively. It is expected that a Northern Region office will be established toward the end of this year, thus completing the program.

An Accident Analysis Group was also established in August to obtain relevant material on the analysis of accident prone locations. This group is also investigating methods of providing priorities for improvements and reconstruction by evaluating the potential economic saving in reducing accidents at accident prone locations.

A total of 579 studies were completed, which are subdivided as follows:

1.	Intersection studies	122
2.	Speed zoning studies	100
3.	Traffic signal studies	55
4.	Illumination	145
5.	Other studies (coroner's jury, individual signs, etc.)	157

In addition, 129 new or revised sign and pavement marking layouts were prepared.

Traffic Characteristics Subsection

During the fiscal year 1962–63 there was a major re-organization of the Planning and Design Branch, which affected the Characteristics Subsection no less than any of the other sections. An expanded Origin-Destination Survey Data Processing Group was added to Characteristics, in addition to some of the field-work functions. The creation of other regional offices, too, increased the groups to which Characteristics had to provide their services.

A total of 479 requests for traffic volume data were processed, 409 originating from inside the department or from the regions and 70 originating from outside the department. In addition, 775 requests for accident data were processed, all but 11 of these requests originating from within the department or from the regions. Further, some 40 requests for speed data, not previously handled by Characteristics, were processed and O-D data obtained from some 258,800 interviews in 13 surveys, were processed and tabulated.

A change in departmental policy also occurred during the year which resulted in public requests for volume data being answered. Data for a booklet of volumes was prepared, but this had not yet been printed at the end of the year. Some 19 form letters, containing volume data, were sent out in reply to queries (not included in the totals above) and many telephone inquiries were answered.

The schedule of permanent and inventory counts was maintained for the second year and the results fed into the Electronic Computing Centre for the calculations of most of the AADT values. The vehicle classification counting program, using the help of the District Highway Maintenance Patrols, was con-

tinued, as was our co-operation in the Metro Toronto Cordon traffic counting program.

Instead of separate annual publications containing volume data and accident data respectively, a combined book containing both sets of data, for common sections of highway, was prepared this year for the first time. In preparing the data for this book, the electronic computer was used to calculate the Travel Experience (MVM) and the Accident Rates for each highway section. All these items had previously been calculated manually.

From the beginning of the calendar year, a detailed monthly summary of the volume data obtained from the permanent traffic counters has been published, replacing the simple annual summary previously published in the separate volume book.

The monthly fatal accidents reports and the semi-annual county road accidents reports were produced as usual. From the beginning of the calendar year, the accident records themselves, on the King's Highways, have been put onto punched cards. This should facilitate the compilation of accident facts for future reports.

Highway Safety

A brief review of Ontario's traffic situation as it exists today shows nearly 84,000 miles of highways, roads and streets in various stages of improvement; they carry 2,200,000 vehicles in various states of repair, driven by more than 2,400,000 licensed Ontario drivers of various degrees of skill, judgment and sobriety. These motorists, in 1962, drove an estimated 18 billion vehicle miles on all highways, roads and streets in Ontario. Approximately two billion, four hundred million vehicle miles were recorded by motorists travelling 575 miles of controlled access highways i.e. the Queen Elizabeth Way, Highways 400 and 401. This represents approximately 13 per cent of all miles travelled in the Province last year. Motor vehicle accidents on these highways accounted for four per cent of the 1962 provincial total.

The 1962 death toll on the highways, roads and streets of Ontario showed an increase of 9.1 per cent over 1961. Motor vehicle traffic accidents resulted in a record 1,383 deaths for the year, as against 1,268 in 1961. The previous high was 1,279 deaths in 1957. The 1962 total of 1,383 represents 35.7 per cent of the 3,878 traffic fatalities recorded in Canada last year. Fatal accidents on the King's Highways System, exclusive of Secondary Highways, totalled 557 in 1962 or 48.9 per cent of the provincial total. These accidents resulted in 711 deaths or 51.4 per cent of the Ontario total. Some 29 per cent of the fatal accidents occurring on the King's Highways involved single vehicles only — little chance for the driver to blame anyone or anything but himself. There was evidence of "drinking" in 46 per cent of the 163 single vehicle fatal accidents. In 1962, "drinking drivers and pedestrians" were involved in 38 per cent of all (557) fatal accidents occurring on the King's Highways.

During the fiscal year 1962–63, the Department of Highways in co-operation with the Provincial Police conducted Traffic Seminars for the first time in Ontario. Attending these seminars were traffic engineers and other officials from the regional and district offices, the district inspectors of the Ontario Provincial Police and senior personnel from their district and detachment offices. Also attending were chief constables or senior officers from several municipal police departments and engineers or assistants from many counties.

The seminars were very informative and proved of particular value to our regional and district officials. Informal discussions with Ontario Provincial Police officers resulted in a number of studies being carried out on the King's Highways, at locations considered "accident prone" or where certain driving hazards existed.

The traffic Seminars, conducted in the Ontario Provincial Police districts in Eastern Ontario, are being continued throughout the remainder of the Province.

The Office of the Supervising Coroner for Ontario forwarded sixty-nine Coroner's Inquest Reports to the Department during the fiscal year. These reports had reference to the recommendations of Coroners' Juries, made at inquests into fatal motor vehicle traffic accidents occurring on the King's Highways. The Department considered the findings and recommendations of the juries, and reports were prepared and made available to the Supervising Coroner.

Program Section

P. E. Wade, P.Eng., Program Engineer

During the past year this section expanded its scope of activities by absorbing the Inventory and the Statistical and Subsidy Studies Groups from the Statistics and Economics Section, which was disbanded. In addition, the Special Liaison Section and the Joint Municipal Projects Group of the Planning Services Section were brought within the Program Section. The effect of this re-organization has resulted in better co-ordination in the setting up of highway construction programs.

Inventory Group

This group carried on its main duties in maintaining the engineering inventory on provincial roads, bridges and railway crossings. It provided the basic information used by other units in the Program Section and answered several hundred requests for inventory information of all types from within and without the department.

During the year, this group published the annual Highway Log, Structure Log and the Railway Crossing Log. These Logs consist of an IBM compilation of inventory information for each section of provincial highways. In addition, a Mileage Table was published for the first time giving the length of sections in a sequence on each provincial highway.

Advance Program Group

This unit continued investigations of provincial highway sections, structures and railway crossings to determine needs and deficiencies. On this basis, the group prepared advance highway construction programs consisting of individual projects with type, extent and value of improvement work. The aim of this unit has been always to have a five-year advance program of construction ready for planning, design and scheduling and this is now an accomplished fact.

Current Program Group

This unit maintained the current capital construction program under control by keeping a constant watch over contract awards, expenditures and changes in scope of work. It prepared the annual Ordinary Resurfacing program for award.

This group also prepared the material for the yearly publication of the Capital Construction Program which is distributed to the Legislature and the communications media at the time of the budget presentation. In addition, it prepared numerous reports with maps and graphs in reply to requests from M.P.P.s, Chambers of Commerce and municipalities.

Scheduling Group

This group set up the pre-engineering schedules for all projects on the current and advanced programs with a control of the flow of work from preliminary planning to contract preparation. In addition, it prepared and maintained a schedule of contract award dates to ensure that capital construction expenditures are kept at the level of funds voted by the Legislature for the applicable fiscal year.

Special Program Studies Group

The group negotiated basic connecting link agreements and construction proposals with various municipalities throughout the province and carried out necessary liaison with the Board of Transport Commissioners and various railway authorities in matters pertaining to railway crossings.

Eighty-two municipalities submitted tentative applications for work on connecting links resulting in 66 construction proposals which were checked, processed and approved. Liaison with railway authorities and the Board of Transport Commissioners was carried out on matters requiring a change in the characteristics of any railway crossing. Submissions as required by the Capital Construction Program were made and a five-year program for grade separations, replacement of structures and for the automatic protection of crossings was updated and maintained.

Statistical and Subsidy Studies

This unit completed a comprehensive study into highway subsidies and published a 256-page report for the Ontario Government entitled "Roads and Streets Grants-in-Aid for Ontario Municipalities." At the same time, it has undertaken a full-scale study on control of access on Ontario's highways with a view to provide the framework for necessary changes in past practice to meet future needs. It has also engaged in the collection, classification and analyses of statistical data pertaining to highway transportation for use in highway planning.

Cartography

C. P. Robins, Supervisor

Early in the year, maps at a scale of four miles to the inch of the single maps of Grey, Prince Edward, and Parry Sound, and of the combination Northumberland and Durham, Victoria and Peterborough were printed from bases revised in 1961.

Bases were revised and maps printed on the same scale of the single map of Simcoe and of the combination Peel, Halton, Dufferin, Wellington, and Waterloo.

In each case the printer furnished a white print of the map which was coloured by this section as a guide for the printer.

During the latter part of the year, the bases for the single maps of Hastings and Muskoka were revised in preparation for printing new maps in 1963.

The leading map companies in the United States were supplied with information concerning new pavements and new highways so as to bring their road maps of Ontario up to date.

The new county map of Simcoe, scale one mile to the inch, was completed.

Work was done from time to time on the following miscellaneous jobs:

1. Revising county and township plans to show new highways and new annexations to the various municipalities.
2. Checking county by-laws.
3. Reviewing subdivision plans.
4. Revising surface sheets for use in the section and in the head office of the Municipal Roads Branch.
5. Revision of wall maps for the various branches of the department.

Towards the latter part of the year all tracings of the districts which are used as patrol maps were revised and brought up to date.

A base was made for a new picnic site map showing only place names, King's and secondary highways and numbers, for both northern and southern Ontario, the former to be used as an insert.

A large part of the year was occupied in making bases for a new 1963 provincial road map for southern and northern Ontario, city cuts, legends and title blocks and sign panel.

A scribed base was made for Prince Edward County, showing only the line work. All lettering was added later by the stick-on method to a cronaflex made from the base.

Some work was done on preparing a manuscript for a new county map, scale four miles to the inch, of the counties of York, Peel, Halton, Wentworth, Haldimand, Lincoln and Welland.

ROAD DESIGN DIVISION

H. D. McMILLAN, P.Eng., *Road Design Engineer*

D. W. Farren, P.Eng., *Assistant Road Design Engineer*

Work Production

During the fiscal year 1962–63 the number of projects pre-engineered, computed and processed through the Road Design Division was 185. These projects consisted of 795 miles of grading, drainage, granular base and paving, including 140 miles of paving only and 70 structures. The above also included 110 miles of re-surfacing.

These totals included work on Highway 401 which accounted for 18 projects, consisting of 60 miles of grading, drainage, granular base and paving and 11 structures.

With the awarding in August 1962 of Contract 62-252, "Hoggs Hollow to Avenue Road", a start was made on the widening of the Toronto By-pass, a stretch of Highway 401, twenty miles in length, from Islington Avenue easterly to Highway 48 which, when completed, will consist of 12 lanes, and at some sections 16 lanes. It is expected that this widening program will require a total of 23 contracts with an estimated cost of $63,000,000 and should be completed sometime in 1967.

Another major program for the 1962–63 fiscal year was the preparation of plans and estimates for the construction of eight service areas along Highway 401. This was accomplished with the co-operation of other divisions of the department after extensive study and research.

Contracts were awarded for the construction and operation of these service areas, all of which will be in operation before the 1963 tourist season reaches its peak.

Further development has been carried out with regard to the production of reduced size contract prints, and it is expected that, in the near future, plan and profile sheets will be produced in two colours.

Experiments along this line show that clean, sharp and completely legible prints are the result. This is considered to be a major step in the production of the ultimate in contract prints.

It is also hoped that when this process is in full operation, considerable savings will be evident in both labour and material.

Policy Development

The drainage policy for King's Highways previously recommended has now been approved by the Minister. This policy allows the department to accept a greater share of the cost of drainage facilities in areas under development.

Where an assumed highway is being reconstructed to an urban standard with storm sewers, the department now accepts all drainage coming toward the highway right-of-way in its existing state. The municipality is asked only to contribute to the oversize required for development.

Where a municipality undertakes a drainage scheme crossing the highway right-of-way, the department will pay the total cost of culverts on the King's Highway, provided the municipality undertakes all other works necessary for adequate outlet.

The redesign of the Toronto By-pass section of Highway 401 has resulted in many different and difficult drainage design problems. With extensive paved areas and very short concentration times, many of the natural outlets have insufficient capacity to accommodate the increased runoff. This redesign must provide sufficient storm outlet for the right-of-way as well as culvert capacity for the adjacent lands in the fully developed state.

Research

New Development in Concrete Pavement Design

Preformed Neoprene Joint Sealer for joint treatment in concrete pavement has been incorporated into our concrete pavement standards, replacing the

liquid filler which had proved unsatisfactory, with indications that it will be quite acceptable.

During the year there were a number of studies initiated in the Road Design head office with the subjects under discussion assigned to the Road Design regional offices for further study and research.

The assignments were as follows:

H. McArthur — Northern Region

A study of guide rail components and structures, and their effect on accident and injury severity, and warrants for the level of guide rail protection for the different classes of King's Highways.

J. Ford — Eastern Region

A study of cross-section standards from the standpoint of improving roadside safety characteristics such as cut and fill slopes, and an economic study of providing this extra safety, as compared to costs based on present standards.

A. Gater — South West Region

A study of the warrants for and the benefits resulting from the use of an urban cross section with curb and gutter and storm sewers as compared to the use of a rural cross section with open ditches.

G. K. Hunter — Central Region

Standardization for placement and planning of utilities.

H. Hurrell — North Western Region

Rock expansion factor and muskeg excavation, in order to develop better methods of estimating these quantities and improving our specifications and methods of payment.

BRIDGE DIVISION

A. M. Toye, P.Eng., *Bridge Engineer*

The activities of the Bridge Division are summarized under the following five sections which form the Division.

Bridge Planning Section

S. McCombie, P.Eng., Bridge Planning Engineer

This section is responsible for preliminary studies of all proposed bridge construction and for the preparation of design data for the design section. During the year 158 scheduled highway structure sites were investigated and approved. In addition, 25 unscheduled structure sites and 18 sites for proposed municipal bridges were investigated and reported on.

Hydrological investigations were made in the case of 60 highway and 79 municipal structure sites. Problems involving navigable waters were dealt with in 31 cases.

Bridge Design Section

B. R. Davis, P.Eng., Bridge Design Engineer

During the year there were 113 designs begun and 101 designs completed.

Designs Begun		Designs Completed	
By department designers	52	By department designers	66
By consultants	61	By consultants	35
Total designs begun	113	Total designs completed	101

A design of unusual interest was the Nogies Creek Bridge in District 7. The problem was to anchor steel bearing piles to a sloping rock surface. "Oslo Points" were used and to our knowledge this is the first application of this technique on this continent. Oslo Points were developed in Norway and have been used extensively in that country.

The most challenging problem met by the design section this year was the Spadina interchange on Hwy. 401. The problem arose from the number of structures in the interchange complex (23); the severe restrictions as to horizontal and vertical clearances; the necessity for horizontal curves, large skews and shallow decks. A solution was found by using long span, continuous, prestressed concrete slabs but a great deal of engineering skill and ingenuity were required in the design. The building of these structures will also present a problem because new construction techniques will be needed together with extremely careful workmanship.

Similar interchanges are being designed by consultants for other locations on the Toronto By-pass and much effort has gone into liaison between our engineers and the consultants in order to arrive at satisfactory designs with a measure of uniformity in treatment.

There was a 70 per cent increase in the use of computer programs over that of last year. A total of 3958 jobs were done on the computer during the year. The development of seven new computer programs brought the total number of programs in use to 49.

Designs were also prepared for some 500 standard concrete and timber culverts with a total estimated value of more than $3,000,000.

Bridge Control Section

A. E. McKim, P.Eng., Bridge Control Engineer

Contracts, estimates and special provisions were prepared for 111 structure contracts with a total value of $9,364,643.00.

These contracts included the following:

70 General contracts with a total value of	$7,197,971
31 Structural Steel contracts	2,005,262
10 Prestressed concrete contracts	161,410
TOTAL	$9,364,643

One contract of special interest was that of the deck contract for the Garden City Skyway. The type of construction is unique in that the final wearing surface is concrete and is attained by means of mechanical oscillating screeds. The tender value of this particular contract was $868,132, making it one of the largest of its type in Ontario.

During the year, 1,314 purchasing requisitions were prepared, specifying the quantity and quality of materials costing some $2,820,000.00.

These requisitions covered a wide variety of materials, including 10,760 tons reinforcing steel, 154,000 lin. ft. piling and 60,600 lin. ft. bridge handrailing. Arrangements were also made to have these materials inspected by private companies specializing in this work.

The Bridge Draughting Group carried out a variety of special assignments during the year, in addition to their routine work of draughting and estimating of quantities.

Six chartered air flights were made over proposed structure sites for the purpose of obtaining oblique aerial photographs, on which were drawn montages of proposed structure designs, to the scale and perspective of the photographs. These photographs were taken by the department's photographer with the guidance of an accompanying section representative. The montages were required for publicity purposes and for presentation at municipal councils and public meetings.

An 8′ x 5′ scale relief model of the proposed Spadina Interchange on Highway 401 was fabricated by this group. Incorporated in the model were structures for 23 bridge sites, proposed ground contours, arboricultural plantings, zone painting and channelization, directional signing, existing and proposed buildings and shopping plazas. Rendered perspective drawings were done for eight of the proposed structures to illustrate design and aesthetic treatment.

In addition, this group prepared control maps, listing each structure (culverts and bridges over 10′ x 6′) for 15 major highways, of the province.

The construction liaison group continued its service to the Operations Branch. This took the form of: assisting with construction problems (mainly concerned with foundation difficulties), arranging for supervision of structural steel and prestressed concrete construction; checking falsework plans; and working with the Specifications Engineer on revisions to Form 9.

Municipal Bridge Liaison Section

K. L. Kleinsteiber, P.Eng., Municipal Bridge Liaison Engineer

The Municipal Bridge Section received from the Municipal Roads Branch and municipalities, 673 sets of various types of plans. They included preliminary plans, final plans and plans for repairs. There were also enquiries regarding all types and varieties of structures, ranging from small culverts to elevated bridges and maintenance buildings.

During the year, 593 final plans were approved as follows: 305 culverts, 262 bridges and 26 maintenance buildings. Wherever possible, discussions were held with municipal and consulting engineers in the planning stages of these projects. In this way basic requirements and geometrics were established and final approval facilitated.

The Municipal Bridge Section has continued to carry out field inspections of bridges and culverts as requested by the District Municipal Engineers. These inspections range from investigation of existing and proposed bridge sites to review of existing structures to determine the safe loadings and/or necessary repairs to damaged portions of the structures.

During the later part of the year, the section began to carry out hydrology investigations on municipal structures. This work was done in conjunction with the hydrology engineers of the Bridge Planning Section. In addition, the section arranged for the design of many timber and concrete bridges and culverts.

Finally, the section investigated and gave approval to 18 load restricting by-laws submitted by municipalities.

Engineering Office Supervisor

W. M. Killin

In addition to routine typing, filing, maintenance of records and personnel administration the section made good progress on the new filing and recording system. This project is now nearing completion. It will make readily available all information concerning any bridge site.

Technical studies were made and reports prepared on various problems.

Miscellaneous

There was increased activity on the part of senior staff members in committee work for C.G.R.A., C.A.S. and E.I.C. as well as for special departmental committees. Staff members also contributed many lectures and papers in connection with departmental meetings.

Summary of Bridge Construction

During the calendar year 122 structures consisting of some 21,432 feet of bridging were completed.

A complete listing of these structures is given in Appendix No. 4. Not included in this listing are 297 concrete culverts in spans ranging from 4 to 20 feet and costing $1,321,573.00.

ENGINEERING SURVEYS DIVISION

Y. ANDERSEN, *Superintendent*

The Engineering Surveys Division was established by the re-organization of the Planning Division effective May 1st, 1962. It was made up by the amalgamation of the Plan Preparation Group, Field Staff Group, and Photogrammetry Group of the former Location Section and the Plan Preparation Group and Field Staff Group of the Southwestern Region Planning Section, and the field staff of the Road Design Division. The Traffic Field Group previously under the Location Section reverted to the Traffic Section.

This division is responsible for all field engineering survey work, aerial photogrammetry and plan preparation work for the Planning and Design Branch in all but the Northwestern Region. In this region, Engineering Surveys Division supplies photogrammetric information only to the Planning Section and the Operations Branch.

Following the Department's policy of decentralization, this division began, immediately upon its formation, to regionalize the drafting and field staffs. The

Central Region was fully staffed and immediately operative. On October 1st, 1962, an office was obtained in Kingston and on January 1st, 1963, temporary space was obtained in North Bay. The portion of the space occupied by the Plan Preparation and Field Staff Groups of the former Southwestern Region Planning Section, was taken over by this division. Transfer of staff to these regions began in 1962 and is continuing.

During this year, approval was obtained to begin special precise levelling work, the aim being to establish permanent, accurate bench marks along highways throughout the province to maintain a standard, indisputable accuracy. Two "Cook Geodetic Levels" and geodetic-type level rods were purchased. Methods and procedures of the Department of Mines and Technical Surveys are being studied and actual work should begin in the summer of 1963.

During the year the former Location Section and Road Design Field Staffs were amalgamated. This required the retraining of each of the respective staffs in each other's work so that all parties would be available for either type of work.

Field survey work continued for plan preparation work, location surveys for existing and proposed highways. Also as the field staff of the Road Design Division was taken over during the year, the division gradually assumed the pre-engineering survey work. This involves preliminary X-sections, drainage, clearing and grubbing details, etc. The total mileage of this type of work after amalgamation of the field staffs was approximately 297 miles.

Some 901 miles of location plans of existing and proposed highways were completed. Also 112 bridge site plans and 52 railway crossing plans were prepared. A summary of this work by Districts is as follows:

District	Plan Mileage	Bridge Site Plans	Railway Crossing Plans
1. Chatham	15.6	9	3
2. London	119.3	8	7
3. Stratford	35.7	7	7
4. Hamilton	95.2	9	5
5. Owen Sound	31.4	3	5
6. Toronto	75.6	25	4
7. Port Hope	52.4	7	4
8. Kingston	69.1	21	
9. Ottawa	37.1		2
10. Bancroft	45.0	3	1
11. Huntsville	14.4	1	
13. North Bay	24.5	3	
14. New Liskeard	15.2	2	
16. Cochrane	0.9	....	
17. Sudbury	51.7	2	6
18. Sault Ste. Marie	18.8	3	1
19. Fort William	25.2	1	1
20. Kenora	62.3	2	4
TOTALS	789.4	106	50
Trans-Canada Highway:			
7. Port Hope	10.3	5	1
9. Ottawa	38.3		
11. Huntsville	2.0	1	1
17. Sudbury	54.0	....	
18. Sault Ste. Marie	3.1		
19. Fort William	4.8		
TOTALS	112.5	6	2
GRAND TOTAL	901.9	112	52

In addition to the standard plan preparation work, a variety of special plan work was completed during the year. This was mainly presentation drawings, charts, photographic mosaics, special design plans, and strip development plans. Drafting for three Functional Reports was completed:

Highway 41 — Roblin Mills to Marysville
Highway 401 — Highway 27 to Highway 48
Highway 406 — St. Catharines to Welland

This special work accounted for 4.5 per cent of the drafting staff for the whole year.

Existing plans were kept up to date by the addition of 5743 land plans, subdivision plans, deeds, etc. Also 695 new plans were numbered and cross-referenced during the year.

Highway strip maps were prepared for 10 new highways, 25 plans were retraced and 82 were revised with new information. Prints of these plans are supplied on a regular basis to 54 individuals throughout the department.

Three qualifying training courses and two qualifying examinations for draftsmen and field staff were conducted during the year with a total of 70 candidates.

Photogrammetry Section

Line Location

During the year, the Photogrammetry Section has projected on aerial photographs some 433.4 miles of new centre line location and added some 260.4 miles of revised locations to existing study plans.

Study Plans

Eight new study plans at the scale of 400′ = 1″ covering 201,333 acres and revised two study plans of the same scale covering 23,710 acres. Ten study plans at a scale of 1320′ = 1″ covering 5,434 square miles, were produced and two plans of the same scale covering 504 square miles were revised.

Stereoplotter

Fourteen contour detail plans at the scale of 100′ = 1″ covering 23,574 acres were prepared and two plans of this scale were revised, covering 660 acres.

Four plans at the scale of 50′ = 1″ covering 257.5 acres, showing contours at the main interchanges, were produced.

One plan at the scale of 40′ = 1″ contoured throughout was produced.

Cross sections were plotted from aerial photographs using the stereoplotter. This amounted to approximately 3,200 cross sections covering some 30 miles of highway.

During the year, 16,243 prints of photographs were ordered from the Department of Lands and Forests and added to our present files and about 7,000 old prints were removed.

SERVICES BRANCH

H. S. HOWDEN, O.L.S., P.Eng., *Director of Services*

The Services Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the department.

Documents Section

H. A. Broom, Superintendent

The Documents Section is responsible for the custody of the department's records. Each of the five basic units of the section — correspondence files, plan files, library, manuals and microfilm — has widened its scope and improved the efficiency of its functions.

The library continues to expand its services through acquisition of new books and periodicals, thus appealing to a growing clientele interested in research pertinent to D.H.O. operations.

The Manuals Group has established liaison with the various branches of the department and as a result, the incidence of conflicting instructions being issued within the department has been reduced.

The Correspondence Files Group has increased speed of service and at the same time saved space by greater use of microfilming. The possibility of using electronic retrieval methods to locate documents on file is being investigated.

The Plan Files Group is continuing the renumbering of all plans. This is an extensive task. The object is conversion to an electronic retrieval system. When done, this will make all plans for any given area easily available. Plans which have been renumbered are also cross-indexed under their old numbers to avoid any confusion that might arise during the change-over.

The Retention and Disposal Group (Microfilming) processes six million documents annually. It is equipped to reproduce from film any of these which may be required for study purposes, or a complete file of photostat copy can be reproduced at any time if a particular project is revived.

Equipment Section

L. Westlake, Superintendent

The Equipment Section is responsible for the technical supervision of all D.H.O. equipment. The head office and regional staffs continued to prepare specifications, inspect all major equipment purchases, develop new machines and supervise the maintenance of all departmental equipment. It also provided information and advice on the replacement and disposal of equipment.

Supervision and organization of D.H.O. garages, staffs, equipment, records and procedures, as well as maintenance methods and programs, are the responsibility of the section.

It operates two garages: District 42 at Downsview and the Surrey Place garage at the parliament buildings, also the Instrument Repair Shop at Downsview. Its Mobile Training School, for mechanics and allied trades, was active in training D.H.O. employees throughout the province.

During the year the Tree Saver, for which the section is responsible, moved 1,536 trees and 1,000 feet of hedges and planted 397 shrubs and bushes.

The section's two "deslickers" treated 30 miles of asphalt roads. The section arranges for the drilling of water wells and supervises such drilling. Its two Well Testing Units cleaned, treated and tested 16 wells on the Service Centre sites on Highway 401, and 34 in D.H.O. patrol yards.

Over 80 asphalt distributors, either owned by the department or used on work in which the department had an interest (contract, municipal, etc.), were inspected and certified for service. New equipment which ensures more accurate and extensive testing of the distributors has been developed in the District 42 shop.

For each district, the section trains two men whose duty it is to inspect and maintain the highway scales located within that district.

The section is studying and reporting on equipment usage and repair costs.

Staff is supplied by the section for instrument evaluation studies and engineering and evaluation of ferries.

All drives, parking lots, and miscellaneous areas adjacent to the department's buildings at Downsview were maintained by the section. The section is responsible for control of parking space for employees' cars.

Land Surveys Section

W. D. Ratz, O.L.S., P.Eng., Superintendent

The Land Surveys Section is responsible for making all legal land surveys and for the preparation and registration of all plans required for the acquisition and disposal of land and for the assumption, reversion, designation and closing of highways.

During the fiscal year, the section obtained registration of 2,934 plans in the appropriate Land Titles and Registry Offices.

The appended table outlines the various types of plans prepared by Land Surveys Section. The plans are listed by type and grouped according to function. Included in the table are the number of plans prepared and the total mileage of each type.

During the fiscal year, 142.69 miles of highway were designated as controlled-access highways. This figure includes the revision and re-designation of portions of the Q.E.W., Trans-Canada Highway and miscellaneous highways for Southern and Northern Ontario. It also includes the designation of proposed Highways 403 and 407 as controlled-access highways with mileages of 62.51 and 3.78 respectively. The total mileage of controlled-access highways in the province now stands at 1,474.92. Eight interchange areas were designated for which no mileage is added. The details appear in an appendix to this report. The designations of the following as controlled-access highways were revoked: Highway 122 with a mileage of 3.06 and of a portion of Highway 17 at the north west limit of Pembroke, with a mileage of 0.76.

During the year, Land Surveys Section conducted one training course for field personnel, which was attended by 28 candidates. Land Surveys qualifying examinations for field and draughting staff were tried by 134 candidates. Eighty-six

passed of whom 12 will be required to pass supplementary examinations. The apprenticeship program for Ontario Land Surveyors is being continued by the section. During the year, four apprentices passed the final examinations.

A co-ordinate control survey was begun on the Toronto By-pass section of Highway 401. The Geodimeter model 4, an electronic surveying instrument capable of measuring any distance from 50 feet to three miles within a fraction of an inch was used in this survey. All angular measurements were read with a Wilde T-2 Theodolite which allows direct readings to one second. The centre line of Highway 401 from Yonge Street to Islington Avenue was established and the existing limits co-ordinated to an accuracy approaching geodetic standards. This co-ordinate control survey has been extremely beneficial to the department's engineers in determining the right-of-way requirements for the proposed construction between Yonge and Keele Streets. The expansion of this co-ordinate control survey westerly to Highway 27 and easterly to Highway 48 is proposed for next year.

Appendices to this report give details of controlled-access highway designations and assumptions, designations, reversions and transfers of sections of the King's Highway, Secondary Highway and Tertiary Roads systems.

TOTAL NUMBER OF PLANS AND MILEAGE

Type	Nomenclature	No. of Plans	Mileage
Plan Types A-H Inclusive—Acquisition of Lands			
"A"	Land Plans	1,859	306.41
"B"	Amended Land Plans	98	.....
"C"	Land Plans Acquiring Limited Interest	72	6.88
"D"	Plans of Abandonment	40	3.74
"E"	Crown Land Plans	108	185.42
"F"	Amended Crown Land Plans	10	.....
"G"	Crown Land Abandonment Plans	36	20.69
"H"	Navigable Waters Protection Act Plans (Crown)	9	0.63
Plan Types I-M Inclusive—Assumption of Existing Highways			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway	15	92.29
"J"	Amended Preliminary Assumption Plans	3	.....
"K"	Assumption Plans (Replacing)	98	156.90
"L"	Assumption Plans	94	49.72
"M"	Amended Assumption Plans	20	.....
Plan Types N-P Inclusive—Designation of Highways			
"N"	Proposed Highway Plans	23	74.00
"O"	Highway Plans	88	422.64
"P"	Controlled-Access Highway Plans	1	0.26
Plan Types Q-T Inclusive—Transfer and Closing of Highways			
"Q"	Reversion to Road Authority	6	11.31
"R"	Transfer to Municipality	65	53.10
"S"	Closing of Road, Plans to Illustrate Route Closed by Order-in-Council	66	22.58
"T"	Road Closing Plans (Ontario Municipal Board)	1	.....
Plan Types U-X Inclusive and Others—Miscellaneous and Special Plans			
"U"	Plans to Illustrate Descriptions	745	159.14
"V"	Survey Plans of Boundaries — Supplementary	133	100.96
"W"	Indian Affairs Plans	8	17.42
"X"	Connecting Link Designations and Agreements	73	89.94
	Miscellaneous Plans	128	12.78
	Totals	3,799	1,786.81

Office Services Section

S. C. Booth, Superintendent

The Office Services Section is responsible for the procurement of office supplies, furniture, office equipment, stationery and medical supplies and for the distribution of these to all districts, branches and sections of the department. During the fiscal year, Office Services processed 21,373 requisitions.

During the fiscal year the Reproduction Offset unit reproduced 7,815,200 copies from 32,387 plates.

The Reproduction Whiteprint unit produced 2,146,514 lineal feet of whiteprint.

Office Services is responsible for providing postal service to all Department of Highways Districts, Regional Offices, and to all offices in the Metropolitan Toronto area. It also provides guide service in the Downsview building.

Property Section

H. Barry, Superintendent

Property Section is responsible for the acquisition of all property and/or property rights required for highway purposes and for the settlement of claims arising therefrom. Also, the section is responsible for the management and ultimate disposal of surplus property.

During the year, 3,749 new agreements were negotiated with property owners which, when added to the carry-over of 792 from the previous year, totalled 4,541. Of these 3,779 were paid, the amount involved being $8,725,339.67.

The buying of property for the widening of Highway 401 westwards from Yonge Street continued. This year, 110 properties were purchased involving 85 buildings. Total compensation paid was $2,173,634.00. Houses sold for wrecking or removal on this stretch totalled 47 — 21 by public auction and 26 by tender.

Of 5,190 property owners involved in the Highway 401 project (Windsor–Quebec border), only 53 claims remain unsettled.

Revenue from property sales along Highway 401 amounted to $617,720.31 for the year. The cumulative total to date is approximately $3,120,000.00. Applications to the Ontario Municipal Board numbered 31, carry-over from last year 21 — total 52, broken down thus:

Settlements made prior to O.M.B. hearing	16	
Appointments heard and awards granted	18	
Appointments heard and judgment reserved	4	
Appointments not yet heard	6	carry-over to 1963–64 year
Applications not yet given Appointment date	8	carry-over to 1963–64 year

Results of Courses and Exams

Probationery Property Agents course (May 1962)

6 Applicants — 5 Passed

Supplementary appraisal examinations (May 1962)

9 Applicants — 7 Passed

Appraisal course (March 1963)

17 Applicants — 11 Passed

The number of pre-appraisals carried out by D.H.O. personnel was 2,725 and fee-appraisals 204.

At the close of the fiscal year 2,609 properties were surplus to requirements and under various stages of disposal. In addition 483 were considered unsaleable.

Revenue derived from sale of surplus property — $1,208,145.43 compared with $599,473.92 in the previous year. An amount of $261,710.24 was derived from leased properties.

The number of employees in the section as of March 31st, 1963 was 222.

Regional Services Managers Section

Under the supervision of the Directors of Services, Regional Services Managers co-ordinate within their regions the functions of the Services Branch so that it may assist other branches as effectively as possible.

This work is the responsibility of a small staff located in each of the five regions and directed by a Regional Services Manager.

Following is a list of Regional Services Managers and the region to which each has been assigned:

1.	M. W. Robinson	South-western Region
2.	D. W. Baird	Eastern Region
3.	N. D. Bennett	Central Region
4.	H. Aron	Northern Region
5.	D. F. Walton	North-western Region

Service Areas Section

C. S. Moase, Manager

The Service Area Section was formed in 1962 for the purpose of administering the department's policy regarding the selection, development, leasing and subsequent inspection of service areas, development of picnic areas adjacent to service areas and investigating "safety rest area" possibilities on controlled-access highways.

The selection of sites suitable for service areas entails considerable investigation. Existing services provided in the area, highway design, availability of potable water, and aesthetic value are of prime importance. Development and leasing requires close co-operation with lessees to ensure that adequate services are provided to the motoring public. Regular inspections are carried out to determine whether the required standards of services are maintained. Suitable action is taken if such standards are not maintained.

During this first year of operation, eight service areas were established on Highway 401. Two Service Areas on Highway 400 were established in 1954 and the section also assumed the administrative duties of these. Picnic facilities are being provided adjacent to each of the eight service areas established on Highway 401.

The need for "safety rest areas" — areas where motorists may pull off the highway for short periods and avail themselves of limited facilities such as picnic

tables, water and comfort stations — is being investigated. Suitable sites are being selected tentatively and basic preliminary work initiated.

Special Services Section

F. E. Cavell, Superintendent

The Special Services Section acts for the Department of Highways in liaison with the Department of Public Works on all matters pertaining to buildings, building sites, office and shop space, and communications, including telephone, teletype and radio.

All D.H.O. space requirements are studied by the section staff. Arrangements are made with D.P.W. for new buildings and for added leased space. This year, some 27,000 square feet of office space were added.

Preliminary architectural designs and plans for needed buildings were prepared by the section and recommended to D.P.W.

Under arrangements with D.P.W., nine buildings and 32 salt sheds were constructed under the supervision of the section. Some 23 requests for property for new building sites were processed.

Maintenance of D.H.O. — occupied buildings and of related services was done under the general supervision of the section's staff.

A mobile radio system was installed in Chatham District. Installation of mobile radio systems was begun in Bancroft, Sudbury and North Bay districts. A system for the Sault Ste. Marie district is under study.

About 1,500 requests for communication equipment were received.

The administration of the teletype service between head offices and field offices was transferred from Office Services Section to the Special Services Section this year. Operators in field offices were instructed in the operation of teletype equipment by the section staff.

Supply Section

R. W. Rawlings, Superintendent

The Supply Section provides a material procurement and distribution service to all branches and districts of the department. In addition to buying construction and maintenance materials and equipment, the section establishes procedures for the distribution, security and accounting thereof. It also operates a central stores supply warehouse at Downsview and a complete D.H.O. Bailey bridging service. This is available to municipalities.

A continuous rehabilitation program was carried out on Bailey bridge components during the year and about 1,000 tons of material were tested, cleaned, repaired and painted. Bailey bridging is extremely useful in providing detours where construction is in progress and also for emergency bridging. During the year, 40 Bailey structures were erected, and 37, having served their purpose, were dismantled and returned to stock. A Bailey Bridge Supply Depot is located in each of the five regions. At March 31st, 1963, there were 155 Bailey bridges in use throughout the province.

The material control unit of this section provides an obsolete material disposal service for the department and also arranges for re-distribution of surplus material. Obsolete materials and equipment are sold at public auction, by tender or

negotiated sale. A total of 224 disposal sales was conducted for this purpose during the year. Revenue from the sales totalled about $250,000.00.

Materials and equipment procured by the purchasing office reached a value of almost $30,000,000.00.

The central stores warehouse at Downsview continued active and maintained an inventory of about 2,000 separate items for maintenance and construction. Shipments totalled over $2,000,000.00.

Tenders Section

W. T. Whittle, Manager

The Tenders Section is responsible for processing tenders on D.H.O. engineering projects, property sales, material and equipment purchases, obsolete equipment and material sales, and Special Services Section projects.

The section also arranges all public tender openings for engineering projects and advertised supply contracts. Tendering information and forms are supplied to contractors, potential property sale bidders and firms requiring tendering material on D.H.O. purchases of heavy and automotive equipment.

The section is responsible for ensuring that all tendering procedures are followed. Where inadequacies are noted or where revision of policy is considered advisable, recommendations are made to the appropriate officials. The section is also responsible for placing the majority of advertisements required by the department, *i.e.* tender calls, auction sales, expropriation notices etc., and for the processing of accounts for this advertising. During the fiscal year the Tenders Section issued to newspapers approximately 2,200 "advertising orders" authorizing the placement of some 2,900 advertisements. The total cost of this advertising was $105,867.71. The section is responsible for the collection and proper accounting of such fees as are levied for tendering material.

In addition, the section collects fees for and distributes manuals dealing with "Specifications and General Conditions of the Contract". The Tenders Section automatically forwards revisions to the manual to all purchasers.

The section distributes standard size specification revisions to all contractors on its file and, in addition, distributes to D.H.O. personnel and members of the legislature the bi-monthly "Proposed Schedule of Tender Calls" for engineering contracts.

Invitation tenders on eight contracts for the construction, operation and maintenance of service areas on Highway 401 were closed during the month of May, 1962. Also closed were invitation tenders for eight contracts dealing with the construction of speed change lanes for these areas. All contracts were awarded in May, 1962.

A policy of conducting supply contract tender openings in public was established in June 1962.

The first invitation bid contract called by the Special Services Section was dealt with during June 1962.

During the year the Supply Section initiated a new policy with respect to emergency purchases made over the telephone. Quotations requested by telephone are now submitted formally by the quoting companies in letters directed to the

Tenders Section. Quotations are opened, recorded, listed and processed daily by the section.

During 1962, supply contract volume increased to such an extent that it became necessary to allot four days a week to the opening of supply tenders.

To increase the security of all tenders received, action was taken to improve procedures for opening and sorting tenders at public tender openings. Checking tables are now so arranged that tenders remain in full view at all times.

For the past several years it has been departmental policy to cancel and recall any contract requiring revision. This policy was altered during 1962 and, subject to the approval of the Deputy Minister, revisions to contracts under call are now released as addenda.

During the year, the Tenders Section compiled a list of daily and weekly newspapers published in Ontario. Copies of this list were supplied to district and regional offices to assist them in the direct placement of advertisements or in recommending publications for advertisements placed on their behalf by the Tenders Section.

The revised Tendering Procedures Manual (Chapters 1, 3 and 4) was published and distributed during 1962.

A total of 11,279 tenders, representing approximately 55 per cent of the total tenders submitted, was received and recorded at the Queen's Park Post Office during the year.

Tenders were called as follows:

(a) **Engineering Contracts**	
Contracts processed	430
Contracts awarded	421
Tendering material released (Plans, Profiles, etc.)	3,859
Net tenders processed	2,398
Average number of bids per contract	5.57
(b) **Engineering Contracts**—Invitation Bids (Contracts less than $10,000.00 in value)	
Invitation contracts processed	150
Tendering material released (sets)	1,360
Net tenders processed	509
Average number of bids per Invitation Contract	3.39
(c) **Property Sale Transactions** (Public Tender)	
Sales processed	8
Net tenders processed	17
Average number of bids per sale	2.13
(d) **Material Requirements**	
Supply contracts and enquiries processed	3,336
Net tenders processed	14,583
Average number of bids per contract	4.37
(e) **Obsolete Material Sales**	
Number of sales processed	53
Net number of tenders processed	205
Average number of bids per sale	3.87
Total expenditure	$142,519.54
Gross revenue (sale of Tendering Material)	32,780.00
Refunds	760.00
Net revenue (sale of Tendering Material)	32,020.00
Gross revenue (sale of Specification Manuals)	1,176.00
Refunds	Nil
Net revenue (sale of Specification Manuals)	1,176.00
Total net revenue (all items)	33,196.00

PERSONNEL BRANCH

J. POGUE, *Director*

The Personnel Branch administers recruitment and placement of staff, staff movements, training, organization and classification, personnel records, staff establishment of branches, the departmental safety program and the Public Service Superannuation Act. It is the branch responsible for the administration of the Public Service Act within the department, and it is responsible for the administration of similar departmental policies and procedures affecting the unclassified staff.

The branch publishes a personnel manual, supplied to the supervisor of each major unit of organization, containing information on both Department of Civil Service and Department of Highways policies and procedures.

The branch also publishes, over the signature of the Deputy Minister, circulars detailing such matters as new salary rates, changes in personnel procedures or policies and other matters of related employee interest. These circulars are widely distributed to both major and minor organizational units for display on bulletin boards, so that employees may be made aware of all new developments as soon as possible.

All employee grievances made under the Public Service Grievance Procedure are reported by supervisors to the Personnel Branch, to ensure that prompt action may be taken where necessary.

Should the grievance reach the stage of a hearing before the Public Service Grievance Board or before a Classification Rating Committee designated by the chairman of the Civil Service Commission, the departmental viewpoint is presented by a member of the Personnel Branch staff.

Recruitment Section

Employment requirements are determined by the Recruitment Section after consultation with branch heads and district engineers. The recruitment and selection program is then carried out. This Section arranges transfers of staff within the Department; also transfers to and from other departments.

From April 1, 1962 to March 31, 1963 there were 5,557 replacements and additions to staff. This figure includes 3,968 seasonal workers and 708 students.

The Recruitment Section hired 424 persons, the remainder of those hired being recruited locally by the regional and district offices. The staff engaged by the Recruitment Section was allocated as follows:

Administration Branch	40
Financial Comptroller's Branch	25
Legal Branch	2
Operations Branch	91
Personnel Branch	5
Planning and Design Branch	108
Services Branch	153
TOTAL	424

The staff of the Recruitment Section, during this period, conducted 4,681 interviews with applicants for employment and in addition conducted many counselling interviews.

The graduating classes in civil engineering at University of Toronto, Queen's University, University of Western Ontario, Waterloo University, Assumption University and Carleton University were interviewed and selections made.

Competition letters were circulated throughout the department describing senior positions as they became vacant, inviting qualified members of the staff to apply. Certain positions were advertised throughout the Ontario Public Service, utilizing the facilities of the Department of Civil Service.

Records Section

The Records Section is responsible for the proper documentation, recording and filing of employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

The section is also responsible for the maintaining of employee anniversary merit increase dates, from which eligibility for merit increases for all eligible employees of the department is determined. In addition to being responsible for maintaining these records on punched cards, this section now prepares Merit Increase lists for certification by the Deputy Minister, authorizing salary increases and prepares lists for certification by the Deputy Minister for salary increases occasioned by Salary Schedule Amendments that have been authorized by Order-in-Council, and published by the Department of Civil Service.

All questions connected with benefits derived under the Public Service Superannuation Act are directed to this section, as are queries connected with attendance and vacation credits.

The position inventory for the entire department, which is now required under the Ontario Civil Service Reclassification Program, is maintained by this section, involving approximately 18,000 transactions in addition to those mentioned below.

At the end of the fiscal year the Department's work force was 12,503 and was distributed as follows:

	1962–63	1961–62	1960–61
Deputy Minister's and Administration Branch	303	264	251
Financial Comptroller's Branch	255	253	255
Services Branch	1,248	1,245	1,276
Planning and Design Branch	1,075	1,057	1,019
Office of the Chief Highway Engineer	.....	8	.....
Operations Branch	9,570	9,867	9,499
Personnel Branch	52	56	47
Municipal Roads Branch	.....	24	47
Legal Branch	.....	40	39
TOTALS	12,503	12,814	12,433

The total work force of 12,503 includes salaried and hourly rated personnel and is grouped as follows:

	1962–63	1961–62	1960–61
Regular and probationary staff	6,757	5,801	5,333
Casual staff (monthly and hourly)	4,904	5,924	5,981
Labourers (hourly)	842	1,089	1,119
TOTALS	12,503	12,814	12,433

By occupation the employees are grouped as follows:

	1962–63	1961–62	1960–61
Clerical and stenographers	2,010	1,979	1,953
Graduate engineers	375	386	361
Engineer's assistants	2,287	2,389	2,569
Draftsmen	633	632	660
Skilled and unskilled labour	5,870	6,184	5,852
Others	1,328	1,244	1,038
TOTALS	12,503	12,814	12,433

During the year 28,021 personnel transactions were carried out by the Personnel Branch as follows:

* New appointments	5,557
Terminations	5,868
† Salary and other changes	16,596

* This figure includes 3,968 seasonal help and 708 summer students.

† This figure includes general salary revisions to certain classes among which were engineers, accountants and surveyors.

Organization and Classification Section

This section is responsible for the administration, throughout the Department, of the classification and salary plan established by the Department of Civil Service. It is responsible for the development and administration of a similar departmental program governing the unclassified employees who are not subject to the Public Service Act.

It is also responsible for the program of appointments to the regular staff of probationary and unclassified employees.

The section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to the individual employees where their problems are of such a nature that their supervisors are unable to assist them.

The regional representatives are also responsible for conducting safety inspections of premises and of field operations being carried out by department employees.

The work initiated during the previous fiscal year under the Ontario Civil Service Reclassification Program was carried on and the branch and regional personnel representatives continued to serve as the department's job analysts, providing advice and guidance to supervisors in the field of position specification writing, rendered highly important by the significance attached to these in the position rating and classification process.

The routine maintenance of the organization charts and position inventories prepared under the program was also carried out, with the Department of Civil Service being advised of all relevant changes.

During the year, the Departmental Rating Committee was established, composed of two members of the staff of this section and a chairman appointed by the Department of Civil Service. This committee re-evaluated positions which had been originally examined by the Central Rating Committee during the early phases of the Reclassification Program and it also examined the specifications of positions where some doubt existed concerning the appropriate class assignment.

Plans were made in conjunction with the Administration Branch and with the Department of Civil Service to provide a classification plan which would suit the needs of a new electronic computer system to be installed in the next fiscal year.

The assignment of the department's legal positions to the new Legal Officer class series was commenced.

Discussions were held with senior officials of the Planning and Design Branch concerning the major reorganization of that group, and, as a result, a considerable number of recommendations were made to the Department of Civil Service for the assignment of these positions to appropriate classifications.

A major study was made, in conjunction with the Operations Branch and the Equipment Section, Services Branch, of the duties performed by the department's equipment operators. These were analyzed and, as a result, a detailed recommendation was made to the Department of Civil Service for the establishment of a new class series for this group of positions.

The Civil Service Commission approved the recommendation but the necessary Order-in-Council had not been made at the close of the fiscal year.

Recommendations were also made to the Department of Civil Service for the establishment of classes for members of bridge crews, forestry crews and many other positions.

A considerable number of revisions to existing class salary ranges were authorized by Order-in-Council during the year, requiring the processing of salary revisions for a large number of employees.

Arrangements were made with the Department of Labour for testing all employees engaged in those trades granted salary revisions in the previous fiscal year. This program was completed in October. The Department of Civil Service was requested to make arrangements for the testing of staff to be recruited in these trade classes, particularly in the areas outside Metropolitan Toronto.

Very close liaison was maintained by the section with the Branch Heads and their staffs, to ensure that any changes in the numbers of employees which might be recommended by subordinate supervisors were considered to be essential to the proper operation of the Department.

The position inventory, established under the Reclassification Program, and maintained by the Records Section, was found to be very useful in this respect.

The routine processing of merit increases, promotions, demotions and other related transactions was carried out in the usual large numbers.

The branch and regional personnel representatives continued to provide an essential liaison between the Personnel Branch and both officials and employees of the branches and districts, giving advice and guidance in a wide variety of personnel matters.

Training Section

This section is responsible for establishing and maintaining training courses as required to improve the efficiency of department operations.

Training courses were held at the Training School at Downsview during the fall and winter months when the reduced construction program enabled employees to attend.

During the period from April 1, 1962 to March 31, 1963, the following branches conducted training courses, the number and extent of which indicates the magnitude of the department's training program.

Branch	Number of Courses	Number of Candidates Attending
Services	39	327
Planning and Design	7	106
Operations	21	429
Administration	1	6
Personnel	33	799
TOTALS	101	1,667

These courses provided instruction in the following department activities:

Construction surveying, design surveying, land surveying, drafting, estimating, inspection, automotive mechanics, safety, first aid, job evaluation, Bailey bridge erection, weigh scale maintenance and property appraisal. Seventy per cent of the candidates writing examinations in connection with these courses were successful.

In addition to courses, promotional examinations were conducted by the following branches:

Branch	Number of Examinations	Number of Candidates Writing Examinations
Services	12	148
Planning and Design	2	32
Operations	3	183
TOTALS	17	363

The examinations were written by employees to qualify for promotion to rodman, highway construction inspector 2, survey technician 2, mechanic 2, draftsman 1, draftsman 2, district accountant and section head. Sixty-five per cent of the candidates were successful.

The Services Branch mobile training unit continued to train automotive mechanics by conducting two-week courses in each district.

The Supply Section conducted two Bailey bridge erection courses at regional offices. Among those attending were seven municipal employees.

Through the joint efforts of the Operations Branch, Materials and Research Section and the City Engineers Advisory Committee, junior and senior courses for municipal inspectors were established. These are two-week courses which replace the one-week courses offered in past years. Two junior and one senior soils courses were held with a total of 86 municipal employees attending.

The Training Section is also responsible, under the direction of the Training Committee, for the Engineers-in-Training Program in which selected junior professional engineers undergo a systematic job rotation program to prepare them for future administrative positions by giving them a broad knowledge of all the department's operations. The sixth such program, composed of eight engineers, was completed in March 1963, and the seventh program was approved and scheduled to commence in June 1963.

Fifty-one employees were approved to attend specialized courses not conducted by the department. This type of training is approved when the courses

pertain directly to the work the employee is doing and the training received will benefit the department.

A total of 2,081 employees participated in the various training activities conducted from April 1, 1962 to March 31, 1963.

Departmental Council System

The Departmental Council convened for ten meetings in the period between April 1, 1962 and March 31, 1963. The Council held a two-day conference at which the chairmen of the department's twenty-eight Branch Councils attended. At this conference a general review and discussion took place on Government regulations, policies, etc.

The appointing by the Minister of his representatives to sit on the Departmental and Branch Councils took place and the annual election of employee representative(s) to the Departmental and Branch Councils was conducted in accordance with regulations made under the Public Service Act.

The active operation of the Branch Councils and the interest shown by both branch heads and employees made for a very successful year. Many varied and sound recommendations were considered and approved.

The Departmental Council and Branch Councils were a contributing factor in the successful conducting of campaigns for the United Appeal, Cancer Society, Canadian Red Cross Blood Clinic, etc.

Safety Section

During the year visits were made to eight districts for the purpose of safety training. Approximately 575 employees attended these meetings.

Each month a safety poster or bulletin was issued throughout the department.

Safety inspections were carried out in 96 patrol installations.

The "Safe Driver Award" plan for accident-free operators was continued and approximately 1,300 medals were awarded.

Each district held a safe and skilled driving competition during the summer months and 612 operators voluntarily participated. The winners of the various district competitions competed at Downsview in the final.

During the year 292 employees received training in the fundamentals of first aid.

The following tables show the department's accident experience for the current and previous year:

(1) *Industrial Accidents*

	1961–62	1962–63
Total hours worked	26,678,798	25,990,992
Number of lost-time accidents	716	677
Days work lost due to these accidents	46,826	28,700
Accident frequency rate (Number of accidents per 1,000,000 hours worked)	26.84	26.05
Accident severity rate (Days lost per 1,000,000 hours worked)	1,755.18	1,104.23

(2) *Motor Vehicle Accidents*

(a) **Trucks**

	1961–62	1962–63
Miles travelled	32,314,813	33,586,496
Responsible accidents	183	161
Frequency rate per 100,000 miles	.57	.48

(b) **Tractors and Graders, etc.**

Miles travelled	3,503,280	3,341,295
Responsible accidents	30	27
Frequency rate per 100,000 miles	.86	.81

Health Centre

W. E. O'Hara, M.D.

Operated and staffed by the provincial Department of Health, an up-to-date health centre is maintained at the Downsview headquarters.

The full-time staff includes one medical officer, six graduate nurses and one receptionist. Two of the nurses hold Public Health Certificates.

The health centre also serves the Department of Transport's Downsview branch and the Ontario Water Resources' Research Division at Highway 401 and Islington Avenue, where no health services are available.

During the fiscal year 1962–63 a total of 20,611 routine calls were handled. X-rays of various types totalled 927 and 140 cardiograms were taken and interpreted.

Employees may request complete medical check-ups at intervals varying with the age groups, from every three years to annually. During the fiscal year, 470 such examinations were carried out. They and all other services are free.

A partial breakdown shows that non-occupational sickness totalled 7,039 and non-occupational accidents ran into 1,214. Compared with these figures, the occupational sickness and accident figure was 975. Some 2,284 consultations were recorded, while 849 cases were referred to outside agencies.

Some of the more frequent types of non-occupational complaints included acute respiratory disorders, 2,095; ill-defined symptoms and conditions, 1,923; digestive disorders, 882; skin diseases, 649; disorders of nervous or sensory origins, 618; menstrual disorders, 351.

In addition to its regular functions, the health centre administered 1,743 tetanus, polio and various other types of immunizations. The immunization program is considered one of the most important features of the health service.

Cafeteria

J. Boddy, Manager

For the benefit of the employees, the department has maintained cafeteria services at the Downsview headquarters since 1956.

Operated by a firm of industrial caterers, a central cafeteria, an executive dining room, a candy counter and eight snack wagons offer full meals as well as snack wagon service twice daily, in addition to take-out service for employees wishing to make use of the several lounges located throughout the various buildings. Children's Christmas parties and the annual roadeo are also catered to.

The staff consists of manager, two supervisors and 28 cooks, waitresses, store-room personnel, etc.

An estimated 180,000 meals are served annually — as many as 750 on peak days. Of coffee alone, some 700 gallons are dispensed weekly at the cafeteria and by the snack wagons.

APPENDIX No. 1

DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, SECONDARY HIGHWAYS, CONNECTING LINKS, DEVELOPMENT ROADS, ROADS IN UNINCORPORATED TOWNSHIPS, BY COUNTIES AND DISTRICTS

April 1, 1962 to March 31, 1963

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway 2	$ 66,483.77	$ 73,311.37	$ 139,795.14
" 5	146.55	24,795.80	24,942.35
" 24	36,822.13	40,281.70	77,103.83
" 24A	.....	21,846.49	21,846.49
" 53	6,539.80	50,428.70	56,968.50
" 54	10,426.67	40,301.38	50,728.05
" 99	157,817.64	16,591.84	174,409.48
" 403	157,380.30	.....	157,380.30
Miscellaneous Surveys	655.89	.....	655.89
Sidewalks:			
Police Village of St. George	368.00	.....	368.00
Connecting Link:			
Town of Paris	.....	972.52	972.52
Development Road:			
Cockshutt Road	18,143.35	.....	18,143.35
	$ 454,784.10	$ 268,529.80	$ 723,313.90
Bruce:			
Highway 4	$ 22,361.05	$ 61,011.06	$ 83,372.11
" 6	18,968.94	159,167.55	178,136.49
" 9	558,861.35	66,294.16	625,155.51
" 21	399,792.89	109,315.67	509,108.56
" 86	1,441.01	20,002.15	21,443.16
Miscellaneous Surveys	178.99	.....	178.99
Connecting Links:			
Town of Kincardine	.....	1,176.35	1,176.35
Village of Lucknow	.....	928.73	928.73
Village of Mildmay	175.20	1,050.74	1,225.94
Town of Port Elgin	.....	537.93	537.93
Village of Teeswater	.....	1,534.27	1,534.27
Town of Walkerton	1,377.66	2,612.68	3,990.34
Town of Wiarton	.....	1,974.33	1,974.33
Development Road:			
Hanover–Chesley	4,268.03	.....	4,268.03
	$1,007,425.12	$ 425,605.62	$1,433,030.74
Carleton:			
Highway 7	$ 14,747.84	$ 36,907.25	$ 51,655.09
" 15	6,914.34	24,641.62	31,555.96
" 16	166,179.74	59,400.04	225,579.78
" 17	157,163.80	374,643.02	531,806.82
" 29	31,809.63	6,532.15	38,341.78
" 31	2,508.80	69,180.08	71,688.88
" 44	5,095.71	15,852.50	20,948.21
Ottawa Queensway	3,716,215.42	1,908.29	3,718,123.71
Miscellaneous Surveys	156,038.73	.....	156,038.73
Connecting Link:			
City of Ottawa	68,546.70	.....	68,546.70
Development Roads:			
Nepean Swamp Road	4,863.90	.....	4,863.90
Burrett's Rapids–County Road 26	22,041.52	.....	22,041.52
Malwood–County Road 20	34,088.33	.....	34,088.33
Fitzroy Station Road	61,073.18	.....	61,073.18

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Carleton: (Cont'd):			
Panmure–Highway 44	$ 2,264.65	$	$ 2,264.65
River Road	2,687.66	.....	2,687.66
	$4,452,239.95	$ 589,064.95	$5,041.304.90
Dufferin:			
Highway 9	$ 35,926.97	$ 48,970.83	$ 84,897.80
" 10	19,878.86	69,715.74	89,594.60
" 24	574.21	29,498.08	30,072.29
" 89	4,112.57	20,494.01	24,606.58
" 104	.....	4,938.19	4,938.19
" 136	.....	1,244.42	1,244.42
Miscellaneous Surveys	185.14	.....	185.14
Connecting Links:			
Town of Orangeville	.....	1,911.55	1,911.55
Village of Shelburne	.....	1,747.68	1,747.68
Development Roads:			
Hornings Mills–Terra Nova (part)	17,690.13	.....	17,690.13
Hornings Mills Bridge	5,675.05	.....	5,675.05
County Road 3	225,984.43	.....	225,984.43
	$ 310,027.36	$ 178,520.50	$ 488,547.86
Elgin:			
Highway 3	$ 837,145.99	$ 114,710.23	$ 951,856.22
" 4	751.16	40,339.26	41,090.42
" 19	19.63	26,905.34	26,924.97
" 73	29,928.67	36,550.82	66,479.49
" 74	674.14	17,908.90	18,583.04
" 76	326,669.74	13,163.22	339,832.96
" 401	3,589,770.68	466.73	3,590,237.41
Connecting Links:			
Town of Aylmer	.....	2,628.37	2,628.37
Village of Port Burwell	.....	2,902.77	2,902.77
Development Roads:			
Calton–Griffen's Corners	205.42		205.42
County Road 39 (part)	720.72	.....	720.72
County Road 36 (part)	2,537.01	.....	2,537.01
	$4,788,423.16	$ 255,575.64	$5,043,998.80
Essex:			
Highway 2	$ 2,868.43	$ 63,894.66	$ 66,763.09
" 3	10,626.60	87,899.65	98,526.25
" 3B	801,958.95	12,877.32	814,836.27
" 18	292,453.98	56,579.02	349,033.00
" 18A	1,017.22	15,135.71	16,152.93
" 39	109,842.74	32,677.17	142,519.91
" 77	1,128.31	.....	1,128.31
" 98	11,634.66	54,097.56	65,732.22
" 107	.....	1,563.24	1,563.24
" 114	280.15	2,683.02	2,963.17
" 401	63,219.27	116,353.15	179,572.42
Pelee Island	.....	3,413.12	3,413.12
Connecting Links:			
Town of Amherstburg	.....	419.17	419.17
Village of Belle River	.....	1,407.96	1,407.96
Town of Essex	.....	480.02	480.02
Town of Harrow	.....	396.08	396.08
Town of Kingsville	3,360.99	378.13	3,739.12
Town of Leamington	.....	468.57	468.57
Town of Ojibway	.....	1,340.17	1,340.17
Town of Tecumseh	2,301.56	.....	2,301.56
City of Windsor	319,754.03	.....	319,754.03
	$1,620,446.89	$ 452,063.72	$2,072,510.61

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Frontenac:			
Highway 2	$ 74,379.76	$ 68,819.04	$ 143,198.80
" 7	745,178.03	51,941.75	797,119.78
" 15	10,655.54	56,864.03	67,519.57
" 33	111,081.22	9,372.72	120,453.94
" 38	98,208.91	108,803.46	207,012.37
" 41	24,035.88	17,736.21	41,772.09
" 95	.....	13,374.33	13,374.33
" 96	1,382.67	44,477.95	45,860.62
" 401	129,498.98	125,028.30	254,527.28
Secondary Highway 506	120,859.10	26,057.64	146,916.74
" " 509	53,117.66	23,034.26	76,151.92
Miscellaneous Surveys	218.93	.....	218.93
Connecting Link:			
City of Kingston	39,152.50	.....	39,152.50
Development Roads:			
Perth Road	145,303.73	.....	145,303.73
Mass Road–County Road 8 (part)	133,394.13	.....	133,394.13
McKnight Road	4,120.78	.....	4,120.78
Snow Road–Ompah	16,154.34	.....	16,154.34
Sydenham–Otter Lake Road	Cr. 89.71	.....	Cr. 89.71
Plevna–Ompah	145,653.46	.....	145,653.46
Parham–Wagarville	51,338.65	.....	51,338.65
Wilson–Vennacher Road (part)	40,216.44	.....	40,216.44
North Township Road 16A	.....	185.27	185.27
Bellrock Road (County Road 7)	3,449.04	.....	3,449.04
Crow Lake Easterly	8,306.85	.....	8,306.85
Otter Lake Road (part)	9,434.42	.....	9,434.42
	$1,965,051.31	$ 545,694.96	$2,510,746.27
Grey:			
Highway 4	$ 15,695.75	$ 68,687.43	$ 84,383.18
" 6	440,787.27	138,212.32	578,999.59
" 10	145,729.62	75,014.64	220,744.26
" 24	.....	8,139.21	8,139.21
" 26	19,996.53	82,876.67	102,873.20
" 89	241.60	.....	241.60
Miscellaneous Surveys	359.58	.....	359.58
Sidewalk:			
Village of Ceylon	1,032.60	132.00	1,164.60
Connecting Links:			
Village of Chatsworth	.....	507.87	507.87
Town of Durham	.....	3,387.85	3,387.85
Village of Flesherton	921.44	1,445.45	2,366.89
Town of Hanover	.....	1,572.17	1,572.17
Village of Markdale	.....	684.96	684.96
Town of Meaford	3,610.37	1,609.63	5,220.00
City of Owen Sound	15,378.46	.....	15,378.46
Town of Thornbury	.....	1,356.88	1,356.88
Development Roads:			
Mount Forest–Shelburne	33,583.63	.....	33,583.63
Flesherton–Singhampton	157,052.68	.....	157,052.68
Concession iv/v	8,017.14	.....	8,017.14
Hanover–Chesley	4,268.02	.....	4,268.02
Road to Ontario Hospital	3,492.30	.....	3,492.30
Between Lots 10/11, Con. v	8,889.44	.....	8,889.44
	$ 859,056.43	$ 383,627.08	$1,242,683.51
Haldimand:			
Highway 3	$ 56,761.98	$ 127,586.44	$ 184,348.42
" 6	28,793.38	60,053.14	88,846.52
" 54	6,928.93	34,582.40	41,511.33
" 56	747.37	13,144.99	13,892.36
Connecting Links:			
Town of Caledonia	207,363.55	1,443.59	208,807.14

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Haldimand (Cont'd):			
Village of Cayuga	$	$ 272.11	$ 272.11
Town of Dunnville	.....	892.03	892.03
Village of Hagersville	.....	714.66	714.66
Village of Jarvis	.....	1,500.98	1,500.98
Development Roads:			
Grand River Road	16,414.09	.....	16,414.09
County Road 2 (part)	41,241.11	.....	41,241.11
	$ 358,250.41	$ 240,190.34	$ 598,440.75
Halton:			
Highway 2	$ 61,689.73	$ 101,573.89	$ 163,263.62
" 5	80,956.46	66,843.64	147,800.10
" 6	6,066.89	4,609.42	10,676.31
" 7	153,461.37	37,356.98	190,818.35
" 20	11,596.86	860.03	12,456.89
" 25	20,149.72	79,491.82	99,641.54
" 122	13,562.60	16,219.59	29,782.19
" 401	8,302.31	111,170.93	119,473.24
" 403	1,822,360.70	.....	1,822,360.70
Queen Elizabeth Way	79,468.19	212,953.91	292,422.10
Miscellaneous Surveys	1,765.71	.....	1,765.71
Connecting Links:			
Town of Acton	18,026.38	790.23	18,816.61
Town of Burlington	.....	375.36	375.36
Town of Georgetown	.....	1,060.47	1,060.47
Town of Milton	66,961.51	586.51	67,548.02
Development Road:			
Concession i/ii Road	35,285.08	.....	35,285.08
	$2,379,653.51	$ 633,892.78	$3,013,546.29
Hastings:			
Highway 2	$ 185,443.65	$ 76,566.45	$ 262,010.10
" 7	39,632.35	56,341.40	95,973.75
" 14	86,331.89	66,899.03	153,230.92
" 28	22,272.24	28,060.31	50,332.55
" 33	4,136.41	39,645.10	43,781.51
" 37	174,782.10	77,458.73	252,240.83
" 41	18,359.65	.....	18,359.65
" 62	910,854.33	143,274.98	1,054,129.31
" 109	5,921.98	3,995.55	9,917.53
" 127	7,143.37	16,017.41	23,160.78
" 401	696,705.26	89,737.79	786,443.05
Secondary Highway 500	412,905.31	28,341.99	441,247.30
" " 502	379.20	64,496.05	64,875.25
" " 517	34.69	13,472.93	13,507.62
" " 620	58,020.09	18,154.95	76,175.04
Forest Access Road			
Watt Lake Road	17,486.50	.....	17,486.50
Miscellaneous Surveys	3,462.02	.....	3,462.02
Sidewalks:			
Hamlet of Foxboro	2,644.00	.....	2,644.00
Hamlet of Plainfield	974.82	.....	974.82
Connecting Links:			
City of Belleville	31,259.54	.....	31,259.54
Town of Desoronto	.....	545.73	545.73
Village of Madoc	.....	1,032.02	1,032.02
Village of Marmora	129,629.79	736.90	130,366.69
Village of Stirling	267,673.26	455.84	268,129.10
Town of Trenton	4,706.43	.....	4,706.43
Village of Tweed	.....	338.92	338.92
Development Roads:			
Ridge Road	17,717.91	.....	17,717.91
Bannockburn Cooper Road	14,345.62	.....	14,345.62

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Hastings (Cont'd):			
Sulphide–Tweed Road	$ 69,866.33	$	$ 69,866.33
Sideroad 15/16	30,365.70	.....	30,365.70
Madoc Boundary West Con. vi	14,286.50	.....	14,286.50
County Road 1 (part)	455,004.00	.....	455,004.00
Concession iii/iv Road (part)	.....	11,093.57	11,093.57
Detlor Road (part)	4,955.98	.....	4,955.98
Concession iv/v Road	39,991.41	.....	39,991.41
Musclow–Greenview Road (part)	5,611.84	.....	5,611.84
Provost Corners Northerly	4,073.38	.....	4,073.38
Egan Creek Bridge-Approaches	4,371.22	.....	4,371.22
Beaver Creek Bridge	2,135.21	.....	2,135.21
Weslemkoon Road (part)	2,502.37	.....	2,502.37
County Road 4 Frankford–Hwy. 401	3,338.03	.....	3,338.03
	$3,749,324.38	$ 736,665.65	$4,485,990.03
Huron:			
Highway 4	$ 720,708.53	$ 105,831.84	$ 826,540.37
" 8	3,999.48	59,784.69	63,784.17
" 9	15,106.58	1,105.36	16,211.94
" 21	824,206.72	83,871.80	908,078.52
" 23	1,758.97	9,195.19	10,954.16
" 81	14,872.40	13,517.73	28,390.13
" 83	2,569.35	59,417.02	61,986.37
" 84	.....	10,639.86	10,639.86
" 86	190,648.64	60,755.58	251,404.22
" 87	2,379.45	31,843.03	34,222.48
Miscellaneous Surveys	29.10	.....	29.10
Connecting Links:			
Town of Clinton	.....	2,235.29	2,235.29
Town of Exeter	.....	2,071.43	2,071.43
Town of Goderich	.....	634.56	634.56
Town of Seaforth	.....	4,040.64	4,040.64
Town of Wingham	.....	2,823.12	2,823.12
Development Roads:			
Brussels–Highway 86	7,437.56	.....	7,437.56
County Road 12 (part)	91,927.84	.....	91,927.84
	$1,875,644.62	$ 447,767.14	$2,323,411.76
Kent:			
Highway 2	$ 21,460.13	$ 59,441.79	$ 80,901.92
" 3	232,081.49	113,886.73	345,968.22
" 21	1,732.10	29,801.61	31,533.71
" 40	12,851.91	50,217.54	63,069.45
" 78	520.86	29,707.35	30,228.21
" 79	2,740.18	7,439.23	10,179.41
" 98	1,920.21	28,541.34	30,461.55
" 401	5,339,493.48	11,161.91	5,350,655.39
Connecting Links:			
Town of Blenheim	6,536.81	1,494.24	8,031.05
Town of Bothwell	.....	478.58	478.58
City of Chatham	168,858.96	.....	168,858.96
Town of Dresden	.....	815.55	815.55
Town of Ridgetown	.....	675.17	675.17
Village of Thamesville	4,599.29	654.68	5,253.97
Town of Tilbury	.....	166.30	166.30
Town of Wallaceburg	.....	4,718.44	4,718.44
Village of Wheatley	.....	325.76	325.76
Development Road:			
Paincourt Easterly	12,833.79	.....	12,833.79
	$5,805,629.21	$ 339,526.22	$6,145,155.43

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Lambton:			
Highway 7	$ 351,923.06	$ 65,915.51	$ 417,838.57
" 21	577,245.80	69,514.55	646,760.35
" 22	370.22	1,834.82	2,205.04
" 40	5,596.82	58,261.52	63,858.34
" 40A	18,408.15	.....	18,408.15
" 79	1,267.05	57,384.89	58,651.94
" 80	14,043.87	Cr. 5,297.31	8,746.56
" 81	23,900.78	.....	23,900.78
" 82	17.55	8,192.92	8,210.47
" 402	29,315.35	28,202.87	57,518.22
Miscellaneous Surveys	36.79	.....	36.79
Sidewalk:			
Police Village of Corunna	815.00	.....	815.00
Connecting Links:			
Town of Forest	98.89	740.38	839.27
Village of Thedford	.....	1,493.27	1,493.27
Village of Watford	.....	817.77	817.77
Village of Wyoming	.....	1,382.31	1,382.31
Development Road:			
Alvinston–Courtright	749,691.88	.....	749,691.88
	$1,772,731.21	$ 288,443.50	$2,061,174.71
Lanark:			
Highway 7	$ 16,079.28	$ 105,259.46	$ 121,338.74
" 15	8,750.34	45,487.47	54,237.81
" 29	99,372.40	34,834.52	134,206.92
" 43	187,945.75	48,754.02	236,699.77
" 44	.....	3,717.96	3,717.96
Secondary Highway 511	6,800.01	15,043.82	21,843.83
Miscellaneous Surveys	Cr. 10.00	.....	Cr. 10.00
Connecting Links:			
Town of Almonte	.....	998.86	998.86
Town of Carleton Place	74,658.99	.....	74,658.99
Town of Perth	.....	3,233.57	3,233.57
Development Roads:			
French Line Road	.....	10,210.38	10,210.38
Lanark–Elphin Road	91,330.60	.....	91,330.60
Flower Station–Darling Bdy. Road	3,000.00	.....	3,000.00
Smith's Falls–North Gower (part)	115,572.73	.....	115,572.73
Fallbrook Westerly	31,852.97	.....	31,852.97
Brightside–Hopetown Road	182,284.75	.....	182,284.75
Innisville Easterly Road	20,033.35	.....	20,033.35
Second Line Road	4,445.55	.....	4,445.55
	$ 842,116.72	$ 267,540.06	$1,109,656.78
Leeds and Grenville:			
Highway 2	$ 184,153.36	$ 156,661.48	$ 340,814.84
" 15	195,742.45	83,002.91	278,745.36
" 16	5,159.49	58,311.69	63,471.18
" 29	2,270.47	48,682.20	50,952.67
" 32	1,339.72	22,196.16	23,535.88
" 42	28,310.42	65,030.18	93,340.60
" 43	12,231.51	52,441.39	64,672.90
" 401	740,057.23	200,355.13	940,412.36
Hill Island Road	2.18	5,423.98	5,426.16
Miscellaneous Surveys	2,959.01	.....	2,959.01
Connecting Links:			
Village of Athens	.....	675.37	675.37
City of Brockville	26,378.68	.....	26,378.68
Village of Kemptville	Cr 1,994.29	786.13	Cr 1,208.16
Separate Town of Prescott	Cr 4,476.45	.....	Cr 4,476.45
Development Roads:			
Houghton Bay Road	17,383.35		17,383.35

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Leeds and Grenville (Cont'd):			
Athena–Mallory Town Road	$ 7,935.00	$	$ 7,935.00
Westport–Bedford Mills County Road 11 (part)	37,775.44	.....	37,775.44
Lilly's Corners–Lyndhurst	35,720.74	.....	35,720.74
Warburton–Long Point	90,483.96	.....	90,483.96
Glen Smail Westerly	20,088.14	.....	20,088.14
County Road 16 (part)	1,647.98	.....	1,647.98
Domville Easterly	500.00	.....	500.00
Highway 16–County Road 18	4,623.11	.....	4,623.11
Yonge Boundary–Highway 89	3,502.30	.....	3,502.30
	$1,411,793.80	$ 693,566.62	$2,105,360.42
Lennox and Addington:			
Highway 2	$ 98,934.88	$ 69,005.45	$ 167,940.33
" 7	315,794.06	19,217.18	335,011.24
" 33	239,782.36	55,669.88	295,452.24
" 41	216,279.06	132,557.34	348,836.40
" 133	76,116.90	.....	76,116.90
" 401	2,004,095.64	59,412.19	2,063,507.83
Ferries	.....	83,036.77	83,036.77
Secondary Highway 500	7,209.88	.....	7,209.88
" " 502	187.41	82,947.37	83,134.78
Miscellaneous Surveys	3,506.80	.....	3,506.80
Connecting Links:			
Village of Bath	191.69	597.00	788.69
Town of Napanee	.....	492.15	492.15
Development Roads:			
Centreville–Enterprise	2,215.10	.....	2,215.10
Beechwood Road	24,949.58	.....	24,949.58
Hay Bay Road	43,948.42	.....	43,948.42
Wilson–Vennacher Road (part)	85,526.52	.....	85,526.52
Odessa Northerly	35,923.68	.....	35,923.68
Tamsworth Easterly Road	1,367.10	.....	1,367.10
County Road 4 (part)	106,422.42	.....	106,422.42
	$3,262,451.50	$ 502,935.33	$3,765,386.83
Lincoln:			
Highway 8	$ 662,743.57	$ 81,467.92	$ 744,211.49
" 8A	1,096.03	6,455.88	7,551.91
" 20	6,580.53	55,976.52	62,557.05
" 57	8,255.59	32,712.53	40,968.12
" 58	322,945.60	6,460.99	329,406.59
" 405	1,111,925.48	.....	1,111,925.48
" 406	216,296.26	.....	216,296.26
Queen Elizabeth Way	4,883,416.18	162,688.37	5,046,104.55
Miscellaneous Surveys	1,822.26	.....	1,822.26
Sidewalk:			
Police Village of Smithville	118.22	.....	118.22
Connecting Links:			
Village of Beamsville	.....	287.10	287.10
Town of Grimsby	.....	514.95	514.95
City of St. Catherines	19.20	306.75	325.95
	$7,215,218.92	$ 346,871.01	$7,562,089.93
Middlesex:			
Highway 2	$ 46,543.34	$ 179,999.32	$ 226,542.66
" 4	1,075,751.89	73,811.18	1,149,563.07
" 7	43,305.57	101,343.30	144,648.87
" 22	21,293.19	51,196.00	72,489.19
" 23	227.98	16,880.78	17,108.76
" 73	319,567.73	11,703.92	331,271.65
" 74	8,044.92	13,290.05	21,334.97

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Middlesex (Cont'd):			
Highway 76	$ 168,016.06	$ 2,062.41	$ 170,078.47
" 80	23,408.42	7,193.11	30,601.53
" 81	134,506.26	94,586.71	229,092.97
" 126	470,818.09	38.50	470,856.59
" 135	212.63	6,607.01	6,819.64
" 401	661,917.12	202,188.40	864,105.52
Miscellaneous Surveys	9,687.34	.....	9,687.34
Connecting Links:			
Village of Lucan	.....	1,009.53	1,009.53
Town of Parkhill	.....	1,195.52	1,195.52
Town of Strathroy	147,467.22	142.80	147,610.02
	$3,130,767.76	$ 763,248.54	$3,894,016.30
Norfolk:			
Highway 3	$ 29,134.33	$ 78,159.87	$ 107,294.20
" 6	6,295.66	20,240.43	26,536.09
" 19	.....	5,401.55	5,401.55
" 24	39,078.97	92,777.33	131,856.30
" 59	261,940.09	78,197.50	340,137.59
Miscellaneous Surveys	1,590.01	.....	1,590.01
Sidewalk:			
Village of Langton	670.13	.....	670.13
Connecting Links:			
Town of Delhi	.....	1,592.26	1,592.26
Town of Simcoe	.....	575.70	575.70
Development Roads:			
County Rd. 9, Hwy. 24 Southerly	9,586.61	.....	9,586.61
Townline Road	11,823.07	.....	11,823.07
	$ 360,118.87	$ 276,944.64	$ 637,063.51
Northumberland and Durham:			
Highway 2	$ 27,395.96	$ 166,816.07	$ 194,212.03
" 7	2,525.83	1,206.70	3,732.53
" 7A	540,241.95	50,489.85	590,731.80
" 28	3,141.11	51,161.74	54,302.85
" 30	13,936.95	53,374.46	67,311.41
" 33	1,844.00	10,072.09	11,916.09
" 35	11,589.46	74,526.29	86,115 75
" 45	6,194.16	47,105.00	53,299.16
" 106	3,534.93	5,623.74	9,158.67
" 115	8,648.92	51,631.57	60,280.49
" 401	1,227,099.74	404,848.13	1,631,947 87
Miscellaneous Surveys	1,051.06	.....	1,051.06
Connecting Links:			
Town of Bowmanville	.....	675.62	675.62
Village of Brighton	.....	594.09	594.09
Town of Campbellford	.....	393.18	393.18
Town of Cobourg	73,258.34	1,007.40	74,265.74
Village of Colborne	.....	487.87	487.87
Village of Hastings	34,379.89	690.99	35,070.88
Village of Newcastle	6,177.63	954.52	7,132.15
Town of Port Hope	.....	602.28	602.28
Development Roads:			
Morganston–Cuffs Corners	214,082.97	.....	214,082.97
Barrie Island Bridge Westerly	1,838.99	.....	1,838.99
County Rd. 18–Hwy. 401 Southerly	85,615.44	.....	85,615.44
County Rd. 18–Hwy. 401 Northerly	3,997.61	.....	3,997.61
Lots 12/13 Concession ii and iii	1,891.40	.....	1,891.40
County Road 1 (part)	1,957.31	.....	1,957.31
Healey's Falls Road	3,828.65	.....	3,828.65
Roseneath Easterly	4,487.35	.....	4,487.35
Base Line Rd. Bowmanville Westerly	6,346.95	.....	6,346.95
	$2,285,066.60	$ 922,261.59	$3,207,328.19

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Ontario:			
Highway 2	$ 267,739.42	$ 65,126.57	$ 332,865.99
" 7	100,976.08	147,699.38	248,675.46
" 7A	40,933.30	9,770.81	50,704.11
" 12	68,244.42	99,591.75	167,836.17
" 47	5,078.76	82,865.19	87,943.95
" 48	15,606.22	18,161.49	33,767.71
" 69	3,715.15	39,569.28	43,284.43
" 401	614,204.40	199,629.35	813,833.75
" 404	412.51	.....	412.51
Secondary Highway 503	870.27	.....	870.27
Miscellaneous Surveys	1,555.35	.....	1,555.35
Connecting Links:			
Village of Beaverton	.....	262.16	262.16
Village of Port Perry	11,493.48	1,306.63	12,800.11
Town of Uxbridge	123,186.31	1,272.54	124,458.85
Town of Whitby	.....	1,954.24	1,954.24
Development Roads:			
Manchester-Goodwood	144,241.04	.....	144,241.04
Thickson Road (part)	4,792.29	.....	4,792.29
	$1,403,049.00	$ 667,209.39	$2,070,258.39
Oxford:			
Highway 2	$ 43,722.21	$ 103,466.50	$ 147,188.71
" 3	3,982.08	7,635.35	11,617.43
" 7	188.78	.....	188.78
" 19	55,729.80	90,433.35	146,163.15
" 53	55,474.53	13,886.83	69,361.36
" 59	18,969.15	170,838.15	189,807.30
" 97	384,144.70	57,469.37	441,614.07
" 401	707,635.35	487,871.93	1,195,507.28
" 403	21,072.72	.....	21,072.72
Miscellaneous Surveys	34.37	.....	34.37
Sidewalk:			
Village of Platsville	1,197.58	.....	1,197.58
Connecting Links:			
Village of Tavistock	.....	854.83	854.83
Sep. Town of Tillsonburg	872.41	539.28	1,411.69
City of Woodstock	1,883.23	.....	1,883.23
	$1,294,906.91	$ 932,995.59	$2,227,902.50
Peel:			
Highway 2	$ 141,675.21	$ 129,620.83	$ 271,296.04
" 5	1,033,450.74	53,643.37	1,087,094.11
" 7	40,814.36	40,003.23	80,817.59
" 9	1,921.59	33,876.18	35,797.77
" 10	1,088,275.84	135,988.11	1,224,263.95
" 24	2,406.33	8,743.23	11,149.56
" 50	587,417.25	70,850.73	658,267.98
" 122	6,950.02	7,762.74	14,712.76
" 136	398.68	34,895.17	35,293.85
" 401	5,241.80	142,730.05	147,971.85
" 403	32,421.69	.....	32,421.69
Queen Elizabeth Way	1,164,754.36	108,542.75	1,273,297.11
Malton Airport Road	2,317.35	.....	2,317.35
Miscellaneous Surveys	24,260.48	.....	24,260.48
Connecting Links:			
Town of Brampton	1,578.77	2,593.92	4,172.69
Village of Port Credit	.....	3,044.60	3,044.60
Development Road:			
Heart Lake Road	26,561.48	.....	26,561.48
	$4,160,445.95	$ 772,294.91	$4,932,740.86

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Perth:			
Highway 7	$ 62,198.30	$ 82,108.90	$ 144,307.20
" 8	11,766.03	59,548.91	71,314.94
" 19	30,962.66	71,933.82	102,896.48
" 23	150,449.68	130,201.36	280,651.04
" 59	8,644.63	6,650.94	15,295.57
" 83	646.56	5,589 53	6,236.09
" 86	2,612.45	35,199.63	37,812.08
Sidewalk:			
Hamlet of Sebastopol	605.02	.....	605.02
Connecting Links:			
Town of Listowel	113,149.02	2,547.77	115,696.79
Village of Milverton	.....	1,014.34	1,014.34
Town of Mitchell	.....	7,060.35	7,060.35
Town of Palmerston	204,477.96	1,076.93	205,554.89
	$ 585,512.31	$ 402,932.48	$ 988,444.79
Peterborough:			
Highway 7	$ 52,965.26	$ 118,021.60	$ 170,986.86
" 7A	1,216.56	.....	1,216.56
" 28	13,812.70	90,897.22	104,709.92
" 30	381.15	4,708.97	5,090.12
" 36	39,285.51	50,250.20	89,535.71
" 45	480,160.86	8,099.68	488,260.54
" 115	113.01	1,419.93	1,532.94
" 121	.....	3,502.09	3,502.09
Secondary Highway 500	2,254.02	6,775.78	9,029.80
" " 504	1,930.85	62,367.08	64,297.93
" " 507	13,261.49	34,754.65	48,016.14
" " 620	154,466.08	6,618.92	161,085.00
Miscellaneous Surveys	31.86	.....	31.86
Connecting Links:			
Village of Lakefield	.....	1,300.14	1,300.14
Village of Norwood	.....	377.04	377.04
Development Roads:			
Katchiwano Lake Road	13,253.50	.....	13,253.50
Hastings–Keene	325,888.83	.....	325,888.83
Havelock–Rush Point	65,899.04	.....	65,899.04
Ninth Line Road	16,536.80	.....	16,536.80
Sixth Line, Cty. Rd. 4–Hwy. 28	7,964.39	.....	7,964.39
Stoney Lake N. Shore Road	9,728.08	.....	9,728.08
County Road 3–Mud Lake I.R.	2,181.76	.....	2,181.76
	$1,201,331.75	$ 389,093.30	$1,590,425.05
Prescott and Russell:			
Highway 17	$ 61,621.51	$ 269,182.40	$ 330,803.91
" 34	628.32	22,431.53	23,059.85
Connecting Links:			
Town of Hawkesbury	1,135.24	2,042.51	3,177.75
Town of Rockland	.....	1,213.03	1,213.03
Village of Vankleek Hill	.....	640.23	640.23
Development Roads:			
Rose Corners–Cambridge Boundary	14,330.21	.....	14,330.21
Vars–Osgoode Township Boundary	19,863.35	.....	19,863.35
County Road 13 (part)	4,204.70	.....	4,204.70
Casselman Westerly Road	32,354.91	.....	32,354.91
Casselman Easterly Road	95,617.74	.....	95,617.74
	$ 229,755.98	$ 295,509.70	$ 525,265.68
Prince Edward:			
Highway 14	$ 273,370.83	$ 30,574.30	$ 303,945.13
" 33	633,667.42	57,567.94	691,235.36
" 41	24,442.79	17,967.03	42,409.82

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Prince Edward (Cont'd):			
Ferries	$	$ 83,036.76	$ 83,036.76
Development Road:			
Scoharie Road	166,600.32	.....	166,600.32
	$1,098,081.36	$ 189,146.03	$1,287,227.39
Renfrew:			
Highway 17	$1,387,562.39	$ 275,611.82	$1,663,174.21
" 29	.....	1,139.45	1,139.45
" 41	542,231.84	81,633.57	623,865.41
" 60	124,625.26	97,176.41	221,801.67
" 62	88,308.80	61,641.82	149,950.62
" 132	430.19	15,734.52	16,164.71
Secondary Highway 500	12,394.83	.....	12,394.83
" " 508	63,327.88	28,964.89	92,292.77
" " 511	6,731.23	6,918.29	13,649.52
" " 512	196,574.88	34,971.92	231,546.80
" " 513	289.97	32,088.06	32,378.03
" " 515	82,155.38	33,523.10	115,678.48
" " 517	34.69	8,622.08	8,656.77
" " 521	2,988.28	13,435.81	16,424.09
" " 635	40.96	3,758.18	3,799.14
Alice Township Line–Ignace Lake	129,324.81	.....	129,324.81
Forest Access Roads:			
Black Donald Road	16,312.61	.....	16,312.61
Two Islands Lake	5,912.63	.....	5,912.63
Miscellaneous Surveys	7,713.58	.....	7,713.58
Connecting Links:			
Town of Arnprior	4,925.77	64.05	4,989.82
Village of Eganville	.....	481.97	481.97
Town of Pembroke	26,935.75	12,105.91	39,041.66
Town of Renfrew	.....	1,549.08	1,549.08
Development Roads:			
McGarth–Clontarf	52,755.48	.....	52,755.48
Concession vi/vii	3,885.11	.....	3,885.11
Admaston–Bagot Townline	24,170.80	.....	24,170.80
Germanicus Road	70,806.24	.....	70,806.24
Highway 62–Locksley	145,951.58	.....	145,951.58
Wilno–Radcliffe Boundary	33,751.86	.....	33,751.86
Bulger's Corner–5th Line	21,315.00	.....	21,315.00
Cormac–Rochefort Road (part)	92,871.13	.....	92,871.13
Kerr Line Road	52,456.07	.....	52,456.07
River Road, County Road 3	57,613.58	.....	57,613.58
	$3,254,398.58	$ 709,420.93	$3,963,819.51
Simcoe:			
Highway 9	$ 1,879.31	$ 33,294.58	$ 35,173.89
" 11	656,718.71	227,180.61	883,899.32
" 12	37,628.95	352,638.65	390,267.60
" 24	301.38	37,559.52	37,860.90
" 26	30,624.69	111,827.44	142,452.13
" 27	27,617.61	193,230.78	220,848.39
" 88	968.37	18,509.59	19,477.96
" 89	9,067.91	44,547.87	53,615.78
" 90	223,094.52	41,288.61	264,383.13
" 91	4,649.02	23,960.30	28,609.32
" 92	2,988.86	25,217.14	28,206.00
" 93	2,769.12	43,360.60	46,129.72
" 103	1,621.28	12,987.05	14,608.33
" 400	299,747.65	285,331.90	585,079.55
Wasaga Beach By-pass	350.00	.....	350.00
Miscellaneous Surveys	10,893.18	.....	10,893.18
Connecting Links:			
Town of Alliston	.....	835.76	835.76

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Simcoe (Cont'd):			
Town of Bradford	$	$ 4,048.70	$ 4,048.70
Village of Coldwater	.....	1,985.77	1,985.77
Town of Collingwood	.....	1,074.70	1,074.70
Village of Elmvale	.....	832.31	832.31
Town of Orillia	2,486.90	5,432.05	7,918.95
Town of Penetang	.....	37.12	37.12
Village of Port McNicoll	.....	1,502.93	1,502.93
Town of Stayner	497.96	827.05	1,325.01
Village of Victoria Harbour	.....	2,382.91	2,382.91
Development Roads:			
Champlain Road	10,685.80	.....	10,685.80
Oro–Medonte Townline	1,839.27	.....	1,839.27
15th Sideroad	8,568.63	.....	8,568.63
Loretto Road	162,150.24	.....	162,150.24
Townline, Hwy. 27–Hwy. 90	103,010.39	.....	103,010.39
River Road Springdale	3,532.81	.....	3,532.81
Highway 26–Washago Beach	161,114.35	.....	161,114.35
Sideroad 5/6	4,297.05	.....	4,297.05
County Road 17 (part)	11,436.70	.....	11,436.70
	$1,780,540.66	$1,469,893.94	$3,250,434.60
Stormont Dundas and Glengarry:			
Highway 2	$ 64,222.95	$ 192,580.07	$ 256,803.02
" 31	14,270.71	48,207.49	62,478.20
" 34	1,307.77	55,322.11	56,629.88
" 43	30,645.60	165,273.45	195,919.05
" 401	6,890,990.96	91,874.40	6,982,865.36
Sidewalk:			
Village of Winchester	.....	547.23	547.23
Connecting Links:			
Town of Alexandria	.....	4,602.79	4,602.79
City of Cornwall	85,910.79	.....	85,910.79
Village of Morrisburg	.....	1,878.16	1,878.16
Village of Winchester	.....	1,407.06	1,407.06
Development Roads:			
Concession vi/vii	2,308.80	.....	2,308.80
Concession iv/v	20,275.27	.....	20,275.27
County Road 21	42,906.42	.....	42,906.42
Between Lots 12/13 Con. ii–viii	2,127.44	.....	2,127.44
County Road 7(part)	3,569.97	.....	3,569.97
	$7,158,536.68	$ 561,692.76	$7,720,229.44
Victoria:			
Highway 7	$ 8,166.25	$ 89,466.15	$ 97,632.40
" 35	332,145.89	77,876.06	410,021.95
" 35A	.....	2,978.67	2,978.67
" 36	7,976.97	32,942.54	40,919.51
" 46	17,101.36	69,206.27	86,307.63
" 48	3,870.04	5,253.84	9,123.88
" 121	27,528.13	28,928.50	56,456.63
Secondary Highway 500	3,468.28	7,746.65	11,214.93
" " 503	280,878.56	96,401.04	377,279.60
" " 505	607.01	20,123.97	20,730.98
Miscellaneous Surveys	3.06	.....	3.06
Connecting Links:			
Village of Bobcaygeon	52,979.72	1,279.15	54,258.87
Village of Fenelon Falls	.....	873.84	873.84
Town of Lindsay	.....	11,210.85	11,210.85
Village of Omemee	.....	364.91	364.91
Development Road:			
Pidgeon Lake Road	42,941.95	.....	42,941.95
	$ 777,667.22	$ 444,652.44	$1,222,319.66

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Waterloo:			
Highway 7	$ 7,556.45	$ 96,017.69	$ 103,574.14
" 8	281,156.55	17,491.87	298,648.42
" 24	5,035.55	17,340.70	22,376.25
" 24A	.....	17,391.46	17,391.46
" 85	20,781.98	16,787.23	37,569.21
" 86	29,716.04	40,220.80	69,936.84
" 97	23,912.96	21,739.50	45,652.46
" 401	205,408.83	84,545.35	289,954.18
Connecting Links:			
Town of Elmira	.....	1,155.63	1,155.63
City of Galt	6,236.70	864.28	7,100.98
Town of Hespeler	.....	2,748.95	2,748.95
Village of New Hamburg	25.60	1,522.31	1,547.91
Town of Preston	6,029.09	14,501.52	20,530.61
	$ 585,859.75	$ 332,327.29	$ 918,187.04
Welland:			
Highway 3	$ 24,830.53	$ 114,619.12	$ 139,449.65
" 3A	969.51	39,406.84	40,376.35
" 3C	1,695.58	23,130.43	24,826.01
" 8	25,075.58	7,780.85	32,856.43
" 20	45,239.13	49,013.52	94,252.65
" 57	1,566.60	65,632.54	67,199.14
" 58	37,268.61	47,498.80	84,767.41
" 405	1,054,612.36	.....	1,054,612.36
" 406	87,538.56	.....	87,538.56
Queen Elizabeth Way	1,439,651.02	162,136.81	1,601,787.83
Miscellaneous Surveys	2,853.40	.....	2,853.40
Connecting Links:			
Town of Port Colborne	.....	1,201.54	1,201.54
City of Welland	.....	560.26	560.26
	$2,721,300.88	$ 510,980.71	$3,232,281.59
Wellington:			
Highway 6	$ 387,746.47	$ 136,296.02	$ 524,042.49
" 7	1,319.30	35,010.41	36,329.71
" 9	17,872.52	73,425.32	91,297.84
" 23	33,726.45	4,256.79	37,983.24
" 24	9,144.33	46,682.13	55,826.46
" 25	43.21	.....	43.21
" 86	10,959.84	50,888.68	61,848.52
" 87	456.95	11,442.81	11,899.76
" 89	1,237.31		1,237.31
" 401	197,682.17	67,874.55	265,556.72
Miscellaneous Surveys	2,300.35	.....	2,300.35
Connecting Links:			
Village of Arthur	134,353.03	873.02	135,226.05
Village of Clifford	.....	1,139.13	1,139.13
Village of Erin	.....	627.70	627.70
Town of Fergus	.....	608.79	608.79
City of Guelph	84,780.26	91.86	84,872.12
Town of Harriston	.....	2,850.30	2,850.30
Town of Mount Forest	.....	1,022.51	1,022.51
Development Roads:			
Mount Forest–Shelburne	33,583.65	.....	33,583.65
County Road 65	24,737.18	.....	24,737.18
	$ 939,943.02	$ 433,090.02	$1,373,033.04
Wentworth:			
Highway 2	$ 39,225.34	$ 38,369.34	$ 77,594.68
" 5	50,914.43	55,013.24	105,927.67
" 6	100,187.35	75,208.92	175,396.27

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Wentworth (Cont'd):	$	$	$
Highway 8	97,897.08	100,063.90	197,960.98
" 20	777,261.14	43,312.20	820,573.34
" 52	7,019.08	56,164.22	63,183.30
" 53	1,122.16	25,231.42	26,353.58
" 56	9,410.99	21,501.50	30,912.49
" 97	862.90	19,762.72	20,625.62
" 99	36,909.66	47,187.83	84,097.49
" 102	24,136.92	8,939.74	33,076.66
" 403	2,692,216.08	.....	2,692,216.08
Queen Elizabeth Way	58,398.93	150,538.13	208,937.06
Miscellaneous Surveys	5,698.30	.....	5,698.30
Sidewalk:			
Police Village of Ancaster	546.75	.....	546.75
Connecting Links:			
Town of Dundas	.....	381.14	381.14
City of Hamilton	64,771.66	725.14	65,496.80
	$3,966,578.77	$ 642,399.44	$4,608,978.21
York:			
Highway 2	$ 410.61	$ 128.56	$ 539.17
" 2A	.....	2,209.95	2,209.95
" 5	30,164.58	4,268.94	34,433.52
" 7	2,380,278.89	136,846.60	2,517,125.49
" 9	6,903.11	11,372.30	18,275.41
" 11	101,388.16	200,270.49	301,658.65
" 27	885,732.02	176,635.52	1,062,367.54
" 47	17,006.10	26,653.88	43,659.98
" 48	756,196.74	254,961.97	1,011,158.71
" 49	1,199.07	.....	1,199.07
" 50	3,210.96	13,786.72	16,997.68
" 117	.....	5,367.80	5,367.80
" 400	261,022.54	177,227.95	438,250.49
" 401	3,500,542.45	364,866.26	3,865,408.71
" 403	396.05	.....	396.05
" 404	421,502.84	.....	421,502.84
" 407	310.28	.....	310.28
Queen Elizabeth Way	95,397.40	95,814.78	191,212.18
Yonge Street (Toronto)	851.00	.....	851.00
Eglinton Avenue (Toronto)	25.00	.....	25.00
Malton Airport Road	344,332.40	30.72	344,363.12
Miscellaneous Surveys	30,405.18	.....	30,405.18
Connecting Link:			
Town of Richmond Hill	6,446.85	1,975.34	8,422.19
	$8,843,722.23	$1,472,417.78	$10,316,140.01

DISTRICT			
Algoma-Manitoulin:			
Highway 17	$1,697,253.43	$ 692,331.61	$2,389,585.04
" 68	318,573.81	230,042.94	548,616.75
" 101	550,312.98	2,336.15	552,649.13
" 108	404,297.69	60,614.04	464,911.73
" 129	243,646.77	147,536.08	391,182.85
Ferries	.....	129,494.54	129,494.54
Secondary Highway 538	3,154.94	5,272.45	8,427.39
" " 540	15,645.08	158,674.04	174,319.12
" " 540A	.....	3,371.01	3,371.01
" " 542	64,823.46	97,594.62	162,418.08
" " 542A	.....	1,922.61	1,922.61
" " 546	12,595.76	47,274.14	59,869.90

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
" " 547	$ 10,732.89	$	$ 10,732.89
" " 548	20,283.62	76,494.32	96,777.94
" " 550	269,823.39	30,820.97	300,644.36
" " 551	6,918.38	28,959.62	35,878.00
" " 552	2,363.83	24,778.24	27,142.07
" " 553	4,329.73	30,076.36	34,406.09
" " 554	22,772.07	12,505.33	35,277.40
" " 555	6,315.52	12,885.44	19,200.96
" " 556	25,512.25	75,169.41	100,681.66
" " 557	156.58	27,758.92	27,915.50
" " 561	3,913.09	28,912.73	32,825.82
" " 563	1,327.14	11,747.69	13,074.83
" " 565	155,042.54	7,435.88	162,478.42
" " 631	81,779.30	78,215.69	159,994.99
" " 637	262,095.35	41,629.68	303,725.03
" " 638	30,598.81	31,602.36	62,201.17
" " 639	9,667.46	.....	9,667.46
Panel Mine Road–Elliot Lake I.D.	.....	7,753.07	7,753.07
Denison Mine Road–Elliot Lake I.D.	.....	4,788.39	4,788.39
Shamrock Mine Road–Elliot Lake I.D.	.....	24,414.88	24,414.88
Milliken Mine Road–Elliot Lake I.D.	.....	7,428.18	7,428.18
Algoma Nordic Mine Rd.–Elliot Lake I.D.	.....	3,918.97	3,918.97
Missanabie-Dalton Road	177,571.76	.....	177,571.76
Forest Access Roads:			
Scarfe Township Road	10,034.10	.....	10,034.10
Franklin Lake Road	7,911.56	.....	7,911.56
Miscellaneous Surveys	66,397.48	.....	66,397.48
Hawk Junction Road	.....	7,607.53	7,607.53
Connecting Links:			
City of Sault Ste. Marie	149,693.48	.....	149,693.48
Town of Thessalon	.....	1,588.92	1,588.92
Unincorporated Townships:			
Campbell	.....	5,483.77	5,483.77
Dawson	.....	1,867.77	1,867.77
Mills	14.00	3,807.41	3,821.41
Robinson	.....	8,131.57	8,131.57
Aberdeen	3,054.40	4,084.93	7,139.33
Aweres	.....	4,975.01	4,975.01
Bridgeland	.....	208.81	208.81
Cobden	.....	1,240.91	1,240.91
Fenwick	2,861.41	5,846.45	8,707.86
Galbraith	.....	4,053.47	4,053.47
Gaudette	.....	649.34	649.34
Havilland	.....	169.01	169.01
Hodgins	395.36	41.08	436.44
Haughton	.....	208.81	208.81
Kars	1,961.45	1,770.47	3,731.92
Kehoe	.....	7.88	7.88
Kirkwood	.....	208.81	208.81
Montgomery	.....	353.97	353.97
Morin	.....	91.80	91.80
Patton	.....	724.20	724.20
Plummer	27,161.43	3,622.26	30,783.69
Ranger Lake Area	.....	12,055.83	12,055.83
Rose	.....	1,907.91	1,907.91
Shedden	.....	5,141.69	5,141.69
Shields	.....	649.35	649.35
Spragge	.....	60.17	60.17
Striker	.....	1,309.80	1,309.80
Township 130	.....	131.40	131.40
Township 131	.....	131.40	131.40
Vankoughnet	.....	1,174.51	1,174.51
Victoria	5,659.27	3,910.78	9,570.05
Wells	4,558.06	49.00	4,607.06

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma-Manitoulin (Cont'd):			
Development Roads:			
Centre Line Road	$ 11,306.90	$	$ 11,306.90
Fourth Line Road	731.01	.....	731.01
Barrie Island Bridge Westerly	.....	6,175.45	6,175.45
Old Garden River Road	3,340.61	.....	3,340.61
	$4,696,588.15	$2,233,201.83	$6,929,789.98
Cochrane:			
Highway 11	$1,701,906.01	$ 512,661.87	$2,214,567.88
" 67	3,098.53	27,091.37	30,189.90
" 101	229,430.90	173,861.67	403,292.57
Ferries	.....	38,357.89	38,357.89
Secondary Highway 572	259.59	7,096.99	7,356.58
" " 574	61,590.30	75,369.14	136,959.44
" " 575	.....	2,548.98	2,548.98
" " 576	.....	3,813.45	3,813.45
" " 577	2,660.20	30,162.74	32,822.94
" " 578	1,407.34	20,046.56	21,453.90
" " 579	29,994.18	57,586.92	87,581.10
" " 581	8,872.26	1,113.22	9,985.48
" " 583	327,795.79	82,030.63	409,826.42
" " 610	15,033.86	19,406.99	34,440.85
" " 626	.....	19,765.79	19,765.79
" " 629	269.93	19,705.69	19,975.62
" " 631	4,163.56	6,432.23	10,595.79
" " 636	25,201.13	5,401.78	30,602.91
Miscellaneous Surveys	797.40	.....	797.40
Sidewalk:			
Township of Mountjoy	4,325.89	.....	4,325.89
Connecting Links:			
Town of Cochrane	.....	1,751.28	1,751.28
Town of Hearst	.....	4,015.81	4,015.81
Town of Iroquois Falls	.....	1,803.37	1,803.37
Town of Matheson	4,671.22	394.43	5,065.65
Town of Timmins	42,141.16	1,894.55	44,035.71
Unincorporated Townships:			
Evelyn	.....	1,329.02	1,329.02
German	.....	1,172.12	1,172.12
Godfrey	.....	1,177.73	1,177.73
Jamieson	.....	1,177.74	1,177.74
Macklem	.....	59.00	59.00
Matheson	172.80	1,202.58	1,375.38
Munro	.....	63.00	63.00
McCann	.....	536.18	536.18
Ogden	.....	1,394.41	1,394.41
Robb	.....	1,177.73	1,177.73
Shaw	.....	184.40	184.40
Sheraton	.....	59.00	59.00
Barker	.....	180.00	180.00
Brower	.....	3,795.84	3,795.84
Calder	.....	2,956.12	2,956.12
Casgrain	197.64	3,600.74	3,798.38
Clute	1,871.42	9,560.24	11,431.66
Devitt	1,443.64	2,829.39	4,273.03
Eilber	2,601.81	3,656.82	6,258.63
Fournier	.....	2,723.75	2,723.75
Fox	.....	1,569.79	1,569.79
Hanlan	35.14	4,577.09	4,612.23
Idington	.....	1,911.48	1,911.48
Kendal	5,935.63	9,663.20	15,598.83
Kennedy	.....	2,154.04	2,154.04
Lamarche	4,595.23	5,288.78	9,884.01
Lowther	.....	3,670.48	3,670.48
McCrea	.....	1,500.74	1,500.74

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Nansen	$	$ 3,226.20	$ 3,226.20
Newmarket	.....	3,059.82	3,059.82
O'Brien	7,159.96	4,414.18	11,574.14
Owens	3,353.75	6,007.65	9,361.40
Pyne	.....	1,462.89	1,462.89
Way	.....	7,717.01	7,717.01
Williamson	1,117.92	2,327.77	3,445.69
Development Roads:			
Genier Road	.....	21,184.32	21,184.32
Victoria Road	50,125.57	.....	50,125.57
Brunelle Road	2,573.39	.....	2,573.39
	$2,544,803.15	$1,230,884.60	$3,775,687.75
Haliburton:			
Highway 28	$ 16,055.10	$ 22,258.71	$ 38,313.81
" 35	16,721.44	93,175.26	109,896.70
" 60	118,103.85	9,272.96	127,376.81
" 109	1,149.28	13,227.11	14,376.39
" 111	2,107.11	7,613.89	9,721.00
" 121	33,823.67	45,211.13	79,034.80
Secondary Highway 500	40,583.09	54,496.18	95,079.27
" " 507	46,027.09	12,031.80	58,058.89
" " 519	125,332.15	51,428.87	176,761.02
" " 530	764.76	35,070.73	35,835.49
Forest Access Road:			
Hindon Township Road	21,962.73	.....	21,962.73
Miscellaneous Surveys	23,121.02	.....	23,121.02
Development Roads:			
Gooderham–Haliburton	230,148.19	.....	230,148.19
Minden Bay Road	23,655.44	.....	23,655.44
Carnarvon Quinn's Corners	54,685.23	.....	54,685.23
	$ 754,240.15	$ 343,786.64	$1,098,026.79
Kenora:			
Highway 17	$2,469,557.86	$ 244,570.06	$2,714,127.92
" 71	8,359.28	83,687.29	92,046.57
" 72	46,731.56	103,772.79	150,504.35
" 105	643,815.72	155,930.48	799,746.20
" 116	128,075.82	17,946.70	146,022.52
" 119	31,923.59	Cr. 60.37	31,863.22
" 125	274,168.62	5,850.22	280,018.84
" 128	10,117.24	62,771.39	72,888.63
Secondary Highway 594	46,110.13	10,869.82	56,979.95
" " 596	11,661.26	45,162.20	56,823.46
" " 596A	.....	9,900.27	9,900.27
" " 598	124.79	3,994.62	4,119.41
" " 599	.....	33,655.37	33,655.37
" " 601	10,666.61	25,126.34	35,792.95
" " 603	635.99	1,021.27	1,657.26
" " 604	3,497.99	18,630.96	22,128.95
" " 605	1,658.97	5,845.68	7,504.65
" " 609	39,418.04	2,520.34	41,938.38
" " 618	281,307.31	5,658.39	286,965.70
Tertiary Road 804	6,720.14	2,494.29	9,214.43
Savant Lake South–Sturgeon River	4,432.99	7,502.65	11,935.64
Alcona Access Road	4,555.51	50.83	4,606.34
Miscellaneous Surveys	26,326.77	.....	26,326.77
Sidewalk:			
Town of Red Lake	1,562.35	.....	1,562.35
Minaki Road South	Cr. 348.90	.....	Cr. 348.90
Connecting Link:			
Town of Kenora	5,982.61	1,888.00	7,870.61

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora (Cont'd):			
Unincorporated Townships:			
Aubrey East	$	$ 2,094.52	$ 2,094.52
Bradshaw	.....	1.59	1.59
Britton	.....	1,510.85	1,510.85
Colenso	.....	519.72	519.72
Drayton	.....	836.64	836.64
Drayton Reserve	.....	589.08	589.08
U.T. East of Willingdon	.....	499.67	499.67
Eton	.....	3,654.38	3,654.38
Ewart	.....	42.00	42.00
Forgie and Boys	.....	1,152.12	1,152.12
Gidley	.....	200.43	200.43
Gundy	.....	471.22	471.22
Indian Reserve 27	9,000.00	292.92	9,292.92
Indian Reserve 32A	.....	499.66	499.66
Indian Reserve 39A	2,503.85	42.00	2,545.85
Indian Reserve 38B	7,472.24	3.50	7,475.74
Kirkup	.....	76.92	76.92
Melgund	6.44	3,740.13	3,746.57
Mutrie	8,120.49	2,314.78	10,435.27
North of Buller	.....	748.10	748.10
North of Smellie	.....	1,350.70	1,350.70
Pellatt	.....	2,485.63	2,485.63
Redditt	.....	759.68	759.68
Redvers	2,335.10	1,187.36	3,522.46
Rowell	2,017.38	4,840.98	6,858.36
Rugby	742.75	2,108.26	2,851.01
Smellie	.....	1,450.04	1,450.04
South of Jaffray	.....	3.50	3.50
South of Pellatt	.....	1,782.32	1,782.32
South Worth	.....	4,053.60	4,053.60
Umbach	.....	2,596.04	2,596.04
Van Horne	.....	1,690.40	1,690.40
Vermilion Additional	.....	800.58	800.58
Wabigoon	2,335.09	1,222.66	3,557.75
Wainwright	.....	1,523.30	1,523.30
West of Redditt	.....	88.38	88.38
Zealand	.....	10,043.60	10,043.60
	$4,091,595.59	$ 906,066.85	$4,997,662.44
Muskoka:			
Highway 11	$ 33,456.83	$ 117,437.07	$ 150,893.90
" 35	563,245.79	39,183.61	602,429.40
" 60	41,898.98	3,610.54	45,509.52
" 69	71,564.51	53,275.94	124,840.45
" 103	17,598.18	78,016.83	95,615.01
" 118	378,005.00	61,757.13	439,762.13
" 400	913.74	.....	913.74
Secondary Highway 501	73,664.97	29,437.38	103,102.35
" " 514	60,722.27	31,492.96	92,215.23
" " 516	2,395.04	22,100.94	24,495.98
" " 525	7,928.24	2,219.26	10,147.50
" " 527	46.75	16,292.80	16,339.55
" " 532	111,862.62	46,444.65	158,307.27
" " 612	911.85	8,384.55	9,296.40
" " 632	6,267.94	20,901.84	27,169.78
Miscellaneous Surveys	19.11	.....	19.11
Connecting Links:			
Town of Bracebridge	40,640.66	1,426.67	42,067.33
Town of Gravenhurst	310.99	3,387.20	3,698.19
Town of Huntsville	.....	2,123.51	2,123.51
Village of Port Carling	.....	1,273.00	1,273.00
Unincorporated Townships:			
Baxter	.....	11,058.93	11,058.93

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Muskoka (Cont'd):			
Gibson North	$	$ 354.94	$ 354.94
Gibson South	.....	1,578.44	1,578.44
Sinclair	.....	3,728.48	3,728.48
Development Roads:			
Muskoka Falls–Vankoughnet	.....	4,030.50	4,030.50
Rosseau–Huntsville Road	10,082.96	.....	10,082.96
Brackenrig Road	8,546.72	.....	8,546.72
Port Cunnington Road	43,791.24	.....	43,791.24
Huntsville–Rosseau Road (part)	115,492.01	.....	115,492.01
12-mile Bay Road	2,948.46	.....	2,948.46
Seeley–Brunel Road	20,109.42	.....	20,109.42
Black Bridge–Mathiasville	3,493.94	.....	3,493.94
	$1,615,918.22	$ 559,517.17	$2,175,435.39
Nipissing:			
Highway 11	$ 642,611.60	$ 221,423.97	$ 864,035.57
" 17	78,534.20	205,841.02	284,375.22
" 60	519,250.72	92,163.02	611,413.74
" 63	62,801.87	79,557.87	142,359.74
" 64	775,972.20	98,907.60	874,879.80
" 94	188.48	15,332.20	15,520.68
" 123	1,028.53	11,703.25	12,731.78
" 127	227,841.82	32,242.68	260,084.50
Secondary Highway 514	339.50	.....	339.50
" " 523	14,995.12	30,357.66	45,352.78
" " 528	.....	3,016.89	3,016.89
" " 531	411.24	5,896.67	6,307.91
" " 533	60,688.28	55,935.68	116,623.96
" " 539	29,295.15	37,648.22	66,943.37
" " 539A	.....	1,636.02	1,636.02
" " 630	85,846.73	41,652.05	127,498.78
Forest Access Road:			
Henry–Crerar Township Road	8,214.89	.....	8,214.89
Miscellaneous Surveys	2,227.58	.....	2,227.58
Connecting Links:			
City of North Bay	15,746.83	.....	15,746.83
Town of Sturgeon Falls	.....	2,834.77	2,834.77
Unincorporated Townships:			
Dickens	.....	1,528.43	1,528.43
Murchison	580.96	1,695.94	2,276.90
Conger	.....	2,287.91	2,287.91
Badgerow	10,279.18	5,553.09	15,832.27
Bastedo	.....	2,996.85	2,996.85
Boulter	.....	141.20	141.20
Clement	.....	143.33	143.33
Crerar	.....	3,257.59	3,257.59
Dana	7,541.90	143.33	7,685.23
Falconer	.....	3,060.56	3,060.56
Gibbons	.....	2,294.11	2,294.11
Gladman	.....	72.91	72.91
Grant	.....	3,333.76	3,333.76
Hugel	14,200.35	6,968.26	21,168.61
Kirkpatrick	547.66	6,786.92	7,334.58
Latchford	.....	452.75	452.75
Law	.....	2.25	2.25
Loudon	.....	1,839.69	1,839.69
MacPherson	668.62	7,974.69	8,643.31
Nipissing Indian Reserve	251.63	.....	251.63
Olive	.....	20.21	20.21
Pardo	190.70	87.68	278.38
Pedley	.....	83.34	83.34
Phelps	8,422.77	6,685.73	15,108.50
Poitras	.....	79.38	79.38
Stewart	111.46	.....	111.46

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Nipissing (Cont'd):			
Wyse	$	$ 48.75	$ 48.75
Strathy	.....	205.62	205.62
Development Roads:			
Concession vi/vii Road	.....	18,276.30	18,276.30
Caderette Corners–Highway 64	4,035.67	.....	4,035.67
	$2,572,825.64	$1,012,170.15	$3,584,995.79
Parry Sound:			
Highway 11	$ 647,903.96	$ 144,399.38	$ 792,303.34
" 69	427,639.63	191,775.92	619,415.55
" 94	722.85	572.80	1,295.65
" 124	325,071.62	140,438.04	465,509.66
Secondary Highway 510	16,198.87	5,770.62	21,969.49
" " 518	144,419.22	90,819.35	235,238.57
" " 520	40,740.69	77,111.55	117,852.24
" " 522	163,314.32	69,637.47	232,951.79
" " 524	4,306.86	7,644.62	11,951.48
" " 526	6,855.59	13,132.27	19,987.86
" " 529	190.20	44,760.12	44,950.32
" " 529A	.....	5,550.59	5,550.59
" " 532	38,032.50	35,338.33	73,370.83
" " 534	41,212.00	68,370.42	109,582.42
" " 559	184.46	21,553.53	21,737.99
" " 592	1,096.41	13,432.03	14,528.44
" " 612	1,849.01	4,675.88	6,524.89
" " 632	759.56	13,538.90	14,298.46
Miscellaneous Surveys	Cr. 3,074.12		Cr. 3,074.12
Connecting Links:			
Town of Parry Sound	12,099.18	3,952.91	16,052.09
Village of Rosseau	.....	1,111.48	1,111.48
Unincorporated Townships:			
Bethune	4,877.70	4,452.86	9,330.56
Blair	56.55	135.78	192.33
Burpee	17,044.97	1,399.70	18,444.67
Conger	.....	3,945.99	3,945.99
Croft	7,743.18	6,675.88	14,419.06
Ferguson	3,315.59	606.98	3,922.57
Ferrie	1,950.05	945.45	2,895.50
Gurd	7,069.88	13,872.30	20,942.18
Hardy	9,459.99	8,045.12	17,505.11
Harrison	.....	894.74	894.74
Henvey	.....	3,938.54	3,938.54
Laurier	7,362.23	11,292.90	18,655.13
Lount	2,483.91	5,440.40	7,924.31
McConkey	2,489.03	3,753.07	6,242.10
McKenzie	2,676.42	1,399.70	4,076.12
Mills	5,286.19	8,04 .12	13,331.31
Monteith	3,927.24	5,428.76	9,356.00
Mowat	530.24	135.78	666.02
Patterson	7,872.16	3,883.73	11,755.89
Pringle	6,023.78	6,091.33	12,115.11
Proudfoot	13,087.20	4,435.78	17,522.98
Spence	3,403.36	5,891.98	9,295.34
Wallbridge	2,739.57	4,810.37	7,549.94
Wilson	2,489.03	3,753.08	6,242.11
Dokis Indian Reserve	.....	113.19	113.19
Development Roads:			
Balsam Road	15,067.73	.....	15,067.73
Rose Point Road	12,304.46	.....	12,304.46
Sideroad 2/3 (part) Con. ii/iii (part)	7,069.30	.....	7,069.30
Middle River Road (part)	.....	21,905.16	21,905.16
Concession ii/iii Road	27,628.43	.....	27,628.43
Murrich–Perry East Con. vi/vii	15,184.83	.....	15,184.83
Strong–Machar Townline	17,293.24	.....	17,293.24

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
Miller Road (Part)	$ 21,770.67	$	$ 21,770.67
Killbear Park Road	6,463.15	.....	6,463.15
Coopers Falls–Housey Rapids	1,955.75	.....	1,955.75
Burks Falls East and Southerly	242.64	.....	242.64
Machar Lake Bridge	1,355.66	.....	1,355.66
	$2,107,746.94	$1,084,879.90	$3,192,626.84
Rainy River:			
Highway 11	$2,711,012.61	$ 86,526.77	$2,797,539.38
" 71	8,241.87	34,979.22	43,221.09
Secondary Highway 600	42,741.02	56,192.58	98,933.60
" " 602	69,939.31	21,468.50	91,407.81
" " 611	189.21	12,399.92	12,589.13
" " 613	51,354.86	36,740.24	88,095.10
" " 615	2,735.99	19,348.38	22,084.37
" " 617	4,276.59	17,587.63	21,864.22
" " 619	12,522.15	24,750.40	37,272.55
" " 621	45,222.23	72,823.42	118,045.65
" " 622	.....	10,239.20	10,239.20
" " 623	12,172.54	8,460.61	20,633.15
" " 633	.....	2,448.14	2,448.14
Miscellaneous Surveys	322.87	.....	322.87
Connecting Links:			
Town of Fort Frances	51,649.61	1,027.28	52,676.89
Town of Rainy River	.....	82.12	82.12
Unincorporated Townships:			
Dance	927.19	4,126.90	5,054.09
Dewart	618.05	2,880.03	3,498.08
Indian Reserve 17A	.....	406.43	406.43
Indian Reserve 18B	.....	175.00	175.00
Indian Reserve 93	3,921.19	.....	3,921.19
Miscampbell	.....	1,895.90	1,895.90
Nelles	.....	2,140.60	2,140.60
North of Dance	.....	406.43	406.43
North of Fleming	.....	3.50	3.50
Sifton	.....	1,782.03	1,782.03
Spohn	.....	976.39	976.39
Sutherland	.....	3,233.16	3,233.16
Development Road:			
Morley/Shenston Westerly	23,605.51	.....	23,605.51
	$3,041,452.80	$ 423,100.78	$3,464,553.58
Sudbury:			
Highway 17	$ 118,376.81	$ 248,278.99	$ 366,655.80
" 64	146,595.98	78,113.45	224,709.43
" 68	700,614.70	53,727.10	754,341.80
" 69	582,566.31	184,153.89	766,720.20
" 101	520,265.46	143,896.67	664,162.13
" 129	67,483.42	77,805.86	145,289.28
Secondary Highway 528	.....	20,816.41	20,816.41
" " 528A	1,478.00	9,410.98	10,888.98
" " 535	53,660.68	86,436.31	140,096.99
" " 536	4,688.47	13,509.67	18,198.14
" " 537	581.39	32,043.98	32,625.37
" " 539	4,666.82	5,785.21	10,452.03
" " 541	11,854.54	37,552.82	49,407.36
" " 541A	97,549.99	2,938.68	100,488.67
" " 543	11,194.60	15,379.12	26,573.72
" " 544	55,784.04	122,507.38	178,291.42
" " 544A	.....	1,627.82	1,627.82
" " 545	214,383.74	31,703.12	246,086.86
" " 549	13,344.27	34,207.69	47,551.96
" " 553	.....	2,942.00	2,942.00

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Secondary Highway 560	$ 29,524.12	$ 69,782.76	$ 99,306.88
" " 560A	.....	9,739.97	9,739.97
" " 606	372.23	2,115.23	2,487.46
" " 607	4,706.00	19,345.11	24,051.11
" " 607A	.....	734.57	734.57
" " 616	.....	658.33	658.33
" " 634	21,488.26	25,453.31	46,941.57
" " 637	71,803.17	Cr. 24,165.81	47,637.36
Chapleau–Foleyet	75.00	.....	75.00
Sudbury By-pass	1,750.00	.....	1,750.00
Forest Access Roads:			
Henry–Crerar Township Road	7,005.79	.....	7,005.79
Kemp–Sothman Township Road	6,238.41	.....	6,238.41
Racine, Floranna, Mageau and Manning Township Road	32,210.44	.....	32,210.44
Miscellaneous Surveys	16,398.70	.....	16,398.70
Sidewalk:			
Village of Val Caron	754.33	.....	754.33
Connecting Links:			
Town of Capreol	.....	1,160.10	1,160.10
Town of Espanola	.....	1,238.45	1,238.45
City of Sudbury	69,958.96	.....	69,958.96
Unincorporated Townships:			
Afton	572.10	99.46	671.56
Allen	.....	964.82	964.82
Bigwood	7,747.17	8,316.81	16,063.98
Cherriman	.....	97.14	97.14
Davis	.....	451.52	451.52
Delamere	8,262.49	3,142.49	11,404.98
Hoskin	.....	2,385.24	2,385.24
Haddo	.....	843.31	843.31
Henry	560.43	2,203.13	2,763.56
Janes	41,540.81	706.67	42,247.48
McNish	190.70	143.33	334.03
Scollard	.....	1,516.34	1,516.34
Foleyet	.....	23.50	23.50
Noble	.....	194.00	194.00
Togo	.....	194.00	194.00
Awrey	1,606.19	178.34	1,784.53
Broder	7,160.05	21,349.21	28,509.26
Burwash	4,357.04	6,048.15	10,405.19
Cartier	.....	262.50	262.50
Cascaden	.....	105.36	105.36
Cleland	9,286.07	4,326.39	13,612.46
Curtin	299.26	39.24	338.50
Dieppe	.....	1,142.33	1,142.33
Dill	5,644.96	5,008.67	10,653.63
Dryden	2,933.45	2,463.09	5,396.54
Eden	401.45	21.01	422.46
Fairbank	.....	126.06	126.06
Foster	.....	474.32	474.32
Hawley	6,355.95	39.90	6,395.85
Hendrie	182.80	.....	182.80
Hess	.....	212.50	212.50
Lorne	797.51	8,191.07	8,988.58
Loughrin	2,760.42	2,501.87	5,262.29
Louise	.....	5,941.07	5,941.07
MacLennan	.....	1,974.16	1,974.16
Merritt	.....	3,469.02	3,469.02
Mongowin	97.66	1,398.87	1,496.53
Norman	.....	498.00	498.00
Rathbun	.....	770.70	770.70
Scadding	.....	1,541.42	1,541.42
Secord	54.83	1,594.32	1,649.15
Servos	.....	532.73	532.73

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Snider	$	$ 96.08	$ 96.08
Street	6,545.88	770.70	7,316.58
Tilton	.....	478.15	478.15
Trill	.....	120.06	120.06
Truman	.....	243.48	243.48
Wisner	.....	566.40	566.40
McKinnon	.....	152.25	152.25
Shakespeare	3,952.87	992.45	4,945.32
Development Roads:			
Spanish River Bridge	107,401.50	.....	107,401.50
River Road	29,064.05	.....	29,064.05
Webbwood Bridge and Approaches	229,491.15	.....	229,491.15
Vermilion Bridge Westerly	13,238.59	.....	13,238.59
Montee-Rouleau Road	52,260.16	.....	52,260.16
Ella Lake Road	31,026.99	.....	31,026.99
Fairbanks Lake Park Road	16,612.21	.....	16,612.21
Concession iv/v Road	4,297.16	.....	4,297.16
Birch Creek Bridge	4,818.21	.....	4,818.21
	$3,466,894.74	$1,403,810.80	$4,870,705.54
Temiskaming:			
Highway 11	$1,624,405.38	$ 157,940.58	$1,782,345.96
" 65	606,421.72	133,336.22	739,757.94
" 66	795,040.67	99,349.75	894,390.42
" 101	45,287.61	32,355.18	77,642.79
" 112	18,154.42	23,130.04	41,284.46
Secondary Highway 558	238,168.72	25,665.01	263,833.73
" " 560	57,132.02	155,816.40	212,948.42
" " 562	13,056.26	26,766.90	39,823.16
" " 564	.....	18,108.29	18,108.29
" " 566	11,902.81	22,404.72	34,307.53
" " 567	10,468.28	47,984.21	58,452.49
" " 568	.....	1,614.07	1,614.07
" " 569	20,164.08	58,093.06	78,257.14
" " 570	.....	4,840.48	4,840.48
" " 571	13,730.78	12,282.93	26,013.71
" " 573	62.99	21,174.17	21,237.16
" " 624	48,100.45	33,645.70	81,746.15
Matachewan Westerly from Sec. Hwy. 566	17,670.03	.....	17,670.03
Forest Access Road:			
Spear Lake Road	1,997.79	.....	1,997.79
Miscellaneous Surveys	5,295.93	.....	5,295.93
Connecting Links:			
Town of Cobalt	.....	2,911.44	2,911.44
Town of Haileybury	.....	2,716.70	2,716.70
Town of New Liskeard	.....	5,399.28	5,399.28
Unincorporated Townships:			
Barber	.....	27.25	27.25
Bayly	.....	70.41	70.41
Beauchamp	.....	1,644.27	1,644.27
Benoit	.....	819.61	819.61
Blair	.....	1,582.06	1,582.06
Bryce	.....	487.71	487.71
Cairo	.....	72.75	72.75
Cane	.....	6,010.26	6,010.26
Catherine	.....	489.25	489.25
Eby	.....	1,710.42	1,710.42
Firstbrook	.....	14.00	14.00
Gillies	.....	39.36	39.36
Grenfell	.....	348.98	348.98
Haultain	.....	203.93	203.93
Henwood	2,222.50	5,282.58	7,505.08
Ingram	977.54	4,551.52	5,529.06
Keefer	.....	1,440.65	1,440.65

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Temiskaming (Cont'd):			
Lebel	$	$ 1,936.16	$ 1,936.16
Lorrain	.....	32.24	32.24
Maisonville	.....	819.61	819.61
Marquis	.....	2,734.20	2,734.20
Marter	6,684.25	3,117.76	9,802.01
Milner	.....	154.38	154.38
Morrisette	.....	148.65	148.65
McEvoy	.....	536.18	536.18
McFadden	.....	118.40	118.40
Nicol	.....	412.49	412.49
Nordica	.....	536.17	536.17
Ossian	89.28	5.00	94.28
Otto	3,361.22	3,248.68	6,609.90
Pacaud	.....	1,796.81	1,796.81
Pense	.....	923.39	923.39
Robillard	1,694.05	3,430.70	5,124.75
Savard	675.92	2,571.87	3,247.79
Sharpe	.....	1,399.90	1,399.90
Tudhope	.....	104.00	104.00
Development Roads:			
Goodfish Road	21,410.33	.....	21,410.33
Concession ii/iii Road	29,261.34	.....	29,261.34
Townline, Hwy. 11–Sec. Hwy. 569	19,997.19	.....	19,997.19
Kap-Kig-Iwan Park Road	7,909.26	.....	7,909.26
	$3,621,342 82	$ 934,356.73	$4,555,699.55
Thunder Bay:			
Highway 11	$1,512,629.21	$ 487,629.20	$2,000,258.41
" 11A	15,248.20	66,424.23	81,672.43
" 17	1,536,982.43	388,224.71	1,925,207.14
" 61	657,694.87	51,323.38	709,018.25
" 130	4,473.24	29,943.26	34,416.50
Secondary Highway 580	5,004.63	6,235.48	11,240.11
" " 582	3,357.92	4,427.75	7,785.67
" " 584	71,785.63	50,921.64	122,707.27
" " 584A	.....	594.18	594.18
" " 585	14.98	49,489.16	49,504.14
" " 586	12.17	2,339.06	2,351.23
" " 587	2,971.51	44,767.21	47,738.72
" " 588	53,027.28	62,649.97	115,677.25
" " 589	16,295.60	38,499.23	54,794.83
" " 590	931.72	46,240.36	47,172.08
" " 591	.....	9,077.58	9,077.58
" " 593	90.70	12,044.91	12,135.61
" " 595	13,899.11	44,536.22	58,435.33
" " 597	.....	9,656.01	9,656.01
" " 599	823.03	47,875.10	48,698.13
" " 608	28,091.54	24,088.97	52,180.51
" " 614	85,227.37	79,410.39	164,637 76
" " 625	13,439.33	36,251.95	49,691.28
" " 627	217.84	6,386.97	6,604.81
" " 628	5,579.86	5,946.68	11,526.54
Tertiary Road 801	11,626.82	4,929.99	16,556.81
" " 802	14,934.12	4,807.14	19,741.26
Savant Lake South–Sturgeon River	.....	5,699.02	5,699.02
Durer Lake Road	.....	6,100.04	6,100.04
Port Arthur–William Ring Road	75.26	.....	75.26
Northern Lights Lake Road	126,122.05	76.40	126,198 45
Miscellaneous Surveys	2,485.06	.....	2,485.06
Connecting Links:			
City of Fort William	1,971.67	.....	1,971.67
Town of Geraldton	18,457.86	5,560.55	24,018.41
City of Port Arthur	Cr. 336.65	.....	Cr. 336.65

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Unincorporated Townships:			
Armstrong	$	$ 355.42	$ 355.42
Blackwell	.....	2.63	2.63
Boucher (U.T. south-west of)	.....	7.00	7.00
Conacher U.T.	.....	21.00	21.00
Dawson Road Lots	2,671.51	7,567.53	10,239.04
Devon	3,403.45	3,002.28	6,405.73
East of Gull Lake U.T.	.....	691.07	691.07
Forbes	2,349.63	8,819.64	11,169.27
Fowler	4,994.85	7,511.19	12,506.04
Goldie	1,455.79	1,506.09	2,961.88
Golding	.....	10.50	10.50
Gorham	9,567.96	16,378.53	25,946.49
Gull Bay Indian Reserve 55	.....	1,000.00	1,000.00
Hardwick	.....	147.90	147.90
Jacques	1,161.28	5,219.79	6,381.07
Kilkenny	1,835.28	761.94	2,597.22
Leduc U.T.	.....	4.37	4.37
Lismore U.T.	.....	335.74	335.74
Lybster	1,456.37	4,783.89	6,240.26
Lyons	926.39	2,013.54	2,939.93
Marks	2,000.00	3,444.92	5,444.92
McTavish West U.T.	.....	347.65	347.65
Northwest of Ames U.T.	.....	125.00	125.00
Pearson	6,424.15	10,852.19	17,276.34
Pic	.....	21.00	21.00
Rossport	600.00	292.15	892.15
Scoble	1,544.40	4,341.92	5,886.32
Sibley	2,455.43	1,202.75	3,658.18
Stirling	1,409.92	2,510.78	3,920.70
Strange	.....	2,663.53	2,663.53
Upsala	1,259.33	2,896.19	4,155.52
Ware	11,667.65	11,342.67	23,010.32
Development Roads:			
Twin Lakes Road	.....	17,304.96	17,304.96
Maplewood Avenue	46,710.25	.....	46,710.25
25th Sideroad (townline)	29,240.13	.....	29,240.13
Golf Links Road Extension	722.28	.....	722.28
Between lots 10/11, Con. v	307.87	.....	307.87
Wilroy Road	411.18	.....	411.18
	$ 4,337,709.46	$ 1,749,642.50	$ 6,087,351.96
COUNTY AND DISTRICT TOTALS	$122,758,970.54	$ 31,666,010.35	$154,424,980.89
Sundry unallocated District Office, Administrative, Engineering, Building, Inventory Charges, etc.	$ 484,101.87	$ 7,523,719.88	$ 8,007,821.75
TOTAL EXPENDITURES	$123,243,072.41	$ 39,189,730.23	$162,432,802.64

APPENDIX No. 2

DEPARTMENT EXPENDITURES BY HIGHWAYS

April 1st, 1962 to March 31st, 1963

Highway No.	Location	Mileage	Construction	Maintenance	Total
King's Highways					
2	Quebec Border–Windsor	437.8	$1,326,348.75	$1,545,381.39	$2,871,730.14
2A	Jct. Hwy. 401 Jct. Hwy. 2	1.3		2,209.95	2,209.95
3	Fort Erie–Windsor	246.9	1,194,563.00	644,497.39	1,839,060.39
3A	Hwy. 3 (Chambers Corners)–Jct. Hwy. 8 and Q.E.W	22.8	969.51	39,406.84	40,376.35
3B	Hwy. 3–Windsor	4.8	801,958.95	12,877.32	814,836.27
3C	Hwy. 3 (Fort Erie)–Ridgeway	7.1	1,695.58	23,130.43	24,826.01
4	Port Stanley–Hwy. 10 (Flesherton)	131.7	1,835,268.38	349,680.77	2,184,949.15
5	Hwy. 27 (Toronto)–Hwy. 2 (Paris)	54.6	1,195,632.76	204,564.99	1,400,197.75
6	Port Dover–Tobermory	202.1	988,845.96	593,787.80	1,582,633.76
7	Ottawa–Sarnia	454.5	4,337,111.06	1,220,663.49	5,557,774.55
7A	Hwy. 115–Manchester	30.7	582,391.81	60,260.66	642,652.47
8	Niagara Falls–Goderich [7]	101.1	1,082,638.29	326,138.14	1,408,776.43
8A	Queenston Bridge–Hwy. 8 (St. Davids)	2.7	1,096.03	6,455.88	7,551.91
9	Hwy. 27 (Schomberg)–Hwy. 21 (Kincardine)	98.2	638,471.43	268,338.73	906,810.16
10	Port Credit–Owen Sound	89.3	1,253,884.32	280,718.49	1,534,602.81
11	Toronto–Rainy River (Sec. Hwy. 622)	1,106.9	9,632,032.47	2,155,469.94	11,787,502.41
11A	Port Arthur–Sistonen's Corners (Jct. Hwys. 11 and 17)	20.5	15,248.20	66,424.23	81,672.43
12	Hwy. 401 (Whitby)–Hwy. 27 (Midland) [7]	72.5	105,873.37	452,230.40	558,103.77
14	Hwy. 33 (Bloomfield)–Hwy. 7 (Marmora)	41.5	359,702.72	97,473.33	457,176.05
15	Hwy. 2 (Barriefield)–Ottawa [7]	71.9	222,062.67	209,996.03	432,058.70
16	Hwy. 2 (Johnstown)–Ottawa	54.8	171,339.23	117,711.73	289,050.96
17	Quebec Border–Manitoba Border [11]	1,299.2	7,507,052.43	2,698,683.63	10,205,736.06
18	Leamington–Windsor	39.6	292,453.98	56,579.02	349,033.00
18A	Hwy. 18 (Kingsville)–Hwy. 18 (Malden Centre)	19.4	1,017.22	15,135.71	16,152.93
19	Port Burwell–Tralee	70.0	86,712.09	194,674.06	281,386.15
20	Niagara Falls–Jct. Hwy. 2 (Burlington)	41.1	840,677.66	149,162.27	989,839.93
21	Hwy. 3 (Morpeth)–Owen Sound	182.9	1,802,977.51	292,503.63	2,095,481.14
22	Hwy. 4 (Masonville)–Hwy. 7	28.5	21,663.41	53,030.82	74,694.23
23	Hwy. 7–Hwy. 9 (Teviotdale)	56.5	186,163.08	160,534.12	346,697.20
24	Port Dover–Collingwood	111.7	93,362.90	281,021.90	374,384.80
24A	Paris–Galt	9.7		39,237.95	39,237.95
25	Hwy. 2 (Campbells Corners)–Acton	22.0	20,192.93	79,491.82	99,684.75
26	Hwy. 400 (Barrie)–Owen Sound	64.8	50,621.22	194,704.11	245,325.33
27	Queen Elizabeth Way–Penetanguishene	82.8	913,349.63	369,866.30	1,283,215.93
28	Hwy. 2 (Port Hope)–Hwy. 62 Bancroft	87.9	55,281.15	192,377.98	247,659.13
29	Hwy. 2 (Brockville)–Arnprior [15]	52.3	133,452.50	91,188.32	224,640.82
30	Hwy. 2 (Brighton)–Hwy. 7 (Havelock)	29.5	14,318.10	58,083.43	72,401.53
31	Hwy. 2 (Morrisburg)–Ottawa	41.0	16,779.51	117,387.57	134,167.08
32	Gananoque–Hwy. 15	11.3	1,339.72	22,196.16	23,535.88
33	Kingston–Hwy. 14 (Stirling)	79.6	990,511.41	172,327.73	1,162,839.14

Highway No.	Location	Mileage	Construction	Maintenance	Total
34	Hwy. 2 (Lancaster)–Hwy. 17 (Hawkesbury)	33.9	$ 1,936.09	$ 77,753.64	$ 79,689.73
35	Hwy. 401–Huntsville [7]	135.0	923,702.58	284,761.22	1,208,463.80
35A	Hwy. 121–Hwy. 35	2.0	.....	2,978.67	2,978.67
36	Hwy. 7–Hwy. 28 (Burleigh Falls)	44.7	47,262.48	83,192.74	130,455.22
37	Hwy. 401 (Belleville)–Hwy. 7 (Actinolite)	26.3	174,782.10	77,458.73	252,240.83
38	Hwy. 2–Hwy. 7 (Sharbot Lake)	45.1	98,208.91	108,803.46	207,012.37
39	Hwy. 2–Windsor	16.0	109,842.74	32,677.17	142,519.91
40	Chatham–Hwy. 402 (Sarnia)	41.9	18,448.73	108,479.06	126,927.79
40A	Hwy. 40 (Corunna)–Hwy. 402	.....	18,408.15	.....	18,408.15
41	Hwy. 33 (Picton)–Pembroke	143.0	825,349.22	249,894.15	1,075,243.37
42	Hwy. 29 (Forthton)–Westport	31.6	28,310.42	65,030.18	93,340.60
43	Hwy. 34 (Alexandria)–Hwy. 7 (Perth)	89.1	230,822.86	266,468.86	497,291.72
44	Almonte–Hwy. 17 (Carp)	11.5	5,095.71	19,570.46	24,666.17
45	Hwy. 2 (Cobourg)–Norwood	33.0	486,355.02	55,204.68	541,559.70
46	Hwy. 7–Hwy. 35 (Coboconk)	33.7	17,101.36	69,206.27	86,307.63
47	Hwy. 48 (Ringwood)–Hwys. 7 and 12	21.3	22,084.86	109,519.07	131,603.93
48	Hwy. 401 (Toronto)–Hwy. 46 (Bolsover)	58.2	775,673.00	278,377.30	1,054,050.30
49	Kleinburg–Hwy. 50	.....	1,199.07	.....	1,199.07
50	Metro Tor. N. Limits–Hwy. 9	19.7	590,628.21	84,637.45	675,265.66
52	Hwy. 2–Wellington/ Wentworth Cty. Line	15.4	7,019.08	56,164.22	63,183.30
53	Hwy. 20–Hwy. 2 (Eastwood)	27.3	63,136.49	89,546.95	152,683.44
54	Hwy. 3 (Cayuga)–Hwy. 2 (Cainsville)	25.3	17,355.60	74,883.78	92,239.38
56	Hwy. 3–Hwy. 53 (Elfrida)	14.6	10,158.36	34,646.49	44,804.85
57	Hwy. 3A–Bismark	8.9	9,822.19	98,345.07	108,167.26
58	Hwy. 3–Hwy. 8 (St. Catharines)	10.0	360,214.21	53,959.79	414,174.00
59	Long Point Park–Shakespeare	66.5	289,553.87	255,686.59	545,240.46
60	Hwy. 17–Jct. Hwy. 35 (Dwight)	134.4	803,878.81	202,222.93	1,006,101.74
61	Fort William–Pigeon River	38.9	657,694.87	51,323.38	709,018.25
62	Hwy. 7 (Madoc)–Quebec Border [60]	117.7	999,163.13	204,916.80	1,204,079.93
63	North Bay–Temiskaming	38.7	62,801.87	79,557.87	142,359.74
64	Hwy. 69–Hwy. 11 (Marten River) [17]	85.7	922,568.18	177,021.05	1,099,589.23
65	Quebec Border–Matachewan	80.5	606,421.72	133,336.22	739,757.94
66	Quebec Border–Hwy. 65	61.5	795,040.67	99,349.75	894,390.42
67	Iroquois Falls–Hwy. 101	20.9	3,098.53	27,091.37	30,189.90
68	South Baymouth–Hwy. 17 (Espanola)	86.5	1,019,188.51	283,770.04	1,302,958.55
69	Hwy. 12–Capreol [11]	204.0	1,085,485.60	468,775.03	1,554,260.63
71	Fort Frances–Hwy. 17 (Longbow Corners) [11]	99.7	16,601.15	118,666.51	135,267.66
72	Hwy. 17 (Dinorwic)–Sioux Lookout	43.5	46,731.56	103,772.79	150,504.35
73	Port Bruce–Dorchester	22.6	349,496.40	48,254.74	397,751.14
74	Hwy. 3 (New Sarum)–Nilestown	13.9	8,719.06	31,198.95	39,918.01
76	Hwy. 3 (Eagle)–Hwy. 2	11.3	494,685.80	15,225.63	509,911.43
77	Leamington–Hwy. 401 (Comber)	.....	1,128.31	.....	1,128.31
78	Hwy. 21–Wallaceburg	10.4	520.86	29,707.35	30,228.21
79	Hwy. 2–Hwy. 7	28.8	4,007.23	64,824.12	68,831.35
80	Hwy. 2 (Strathburn)–Hwy. 79	17.7	37,452.29	1,895.80	39,348.09
81	Hwy. 2 (Delaware)–Hwy. 21 (Grand Bend)	38.6	173,279.44	108,104.44	281,383.88

Highway No.	Location	Mileage	Construction	Maintenance	Total
82	Hwy. 7–Hwy. 21 (Hanks Corners)	5.5	$ 17.55	$ 8,192.92	$ 8,210.47
83	Hwy. 23 (Russeldale)–Hwy. 2 (Brewster)	24.1	3,215.91	65,006.55	68,222.46
84	Hensall–Hwy. 21 (St. Joseph)	10.7	.....	10,639.86	10,639.86
85	Hwy. 8 (Kitchener)–Elmira	7.3	20,781.98	16,787.23	37,569.21
86	Hwy. 7–Hwy. 21 (Amberley)	78.6	235,377.98	207,066.84	442,444.82
87	Hwy. 9–Hwy. 86 (Bluevale)	19.6	2,836.40	43,285.84	46,122.24
88	Hwy. 11–Hwy. 27 (Bondhead)	5.5	968.37	18,509.59	19,477.96
89	Hwy. 400–Hwy. 23 (Palmerston)	21.8	14,659.39	65,041.88	79,701.27
90	Barrie–Angus	11.3	223,094.52	41,288.61	264,383.13
91	Hwy. 26–Hwy. 24 (Duntroon)	5.1	4,649.02	23,960.30	28,609.32
92	Hwy. 27 (Elmvale)–Wasaga Beach	8.2	2,988.86	25,217 14	28,206.00
93	Hwy. 11 (Barrie)–Hwy. 27 (Waverly)	17.5	2,769.12	43,360.60	46,129.72
94	Hwy. 17–Callander	5.5	911.33	15,905.00	16,816.33
95	Hornes Point–Hwy. 96 (Wolfe Island)	7.1	.....	13,374.33	13,374.33
96	Quebec Head–W. end of Wolfe Island	20.4	1,382.67	44,477.95	45,860.62
97	Hwy. 6 (Freelton)–Hwy. 19	39.3	408,920.56	98,971.59	507,892.15
98	Hwy. 3 (Blenheim)–Windsor	55.1	13,554.87	82,638.90	96,193.77
99	Hwy. 8 (Dundas)–Hwy. 24	16.9	194,727.30	63,779.67	258,506.97
101	Quebec Border–Hwy. 17 (Wawa)	153.4	1,345,296.95	352,449.67	1,697,746.62
102	Hamilton–Dundas	2.2	24,136.92	8,939.74	33,076.66
103	Hwy. 12 (Waubaushene)–Hwy. 69 (Footes Bay)	29.9	19,219.46	91,003.88	110,223.34
104	Hwy. 9–Grand Valley	1.8	.....	4,938.19	4,938.19
105	Hwy. 17 (Vermilion Bay)–Red Lake	111.0	643,815.72	155,930.48	799,746.20
106	Hwy. 28 (Dale)–Welcome	2.6	3,534.93	5,623.74	9,158.67
107	Hwy. 18–Hwy. 3 (Ruthven)	1.0	.....	1,563.24	1,563.24
108	Hwy. 17–Sec. Hwy. 639 (Quirke Lake)	26.0	404,297.69	60,614.04	464,911.73
109	Hwy. 28–Sec. Hwy. 500	15.9	7,071.26	17,222.66	24,293.92
111	Dyno Mine–Sec. Hwy. 500	6.8	2,107.11	7,613.89	9,721.00
112	Hwy. 11–Hwy. 66	12.4	18,154.42	23,130.04	41,284.46
114	Hwy. 3 (Maidstone)–Hwy. 98	1.2	280.15	2,683.02	2,963.17
115	Hwy. 401–Peterborough [35]	17.1	8,761.93	53,051.50	61,813.43
116	Hwy. 72 (Patricia)–Hudson	10.4	128,075.82	17,946.70	146,022.52
117	Hwy. 7–Metro Tor. N. Limits	1.3	.....	5,367.80	5,367.80
118	Hwy. 35–Hwy. 69 (Glen Orchard)	50.6	378,005.00	61,757.13	439,762.13
119	Hwy. 17 (Dryden)–Richan	13.9	31,923.59	Cr. 60.37	31,863.22
121	Hwy. 35–Tory Hill	64.2	61,351.80	77,641.72	138,993.52
122	Hwy. 2–Queen Elizabeth Way	3.8	20,512.62	23,982.33	44,494.95
123	Hwy. 11–North Bay Airport	4.5	1,028.53	11,703.25	12,731.78
124	Hwy. 69 (Parry Sound)–Sundridge	50.5	325,071.62	140,438.04	465,509.66
125	Hwy. 105–Cochenour Mine	7.7	274,168.62	5,850.22	280,018.84
126	Hwy. 401–Hwy. 2 (London)	.....	470,818.09	38.50	470,856.59
127	Hwy. 62 (Maynooth) Hwy. 60	26.8	234,985.19	48,260.09	283,245.28
128	Kenora–Redditt	17.7	10,117.24	62,771.39	72,888.63
129	Hwy. 17–Chapleau	139.6	311,130.19	225,341.94	536,472.13
130	Hwy. 11 (Port Arthur) Hwy. 61	17.8	4,473.24	29,943.26	34,416.50
132	Hwy. 41–Renfrew	17.8	430.19	15,734.52	16,164.71
133	Hwy. 33 (Millhaven)–Hwy. 401	1.4	76,116.90	.....	76,116.90
135	Hwy. 2–Hwy. 401 (London)	3.8	212.63	6,607.01	6,819.64
136	Hwy. 24–Orangeville	7.8	398.68	36,139.59	36,538.27
400	Hwy. 401–Hwy. 12 (Coldwater)	73.7	561,683.93	462,559.85	1,024,243.78

Highway No.	Location	Mileage	Construction	Maintenance	Total
401	Lancaster–Windsor	404.7	$26,581,865.67	$ 2,760,114.55	$29,341,980.22
402	Hwy. 7–Blue Water Bridge	4.0	29,315.35	28,202.87	57,518.22
403	Toronto–Hwy. 401 (Woodstock)		4,725,847.54		4,725,847.54
404	Extension to Don Valley Parkway		421,915.35		421,915.35
405	Q.E.W.–International Bridge (Queenston)		2,166,537.84		2,166,537.84
406	Welland–St. Catharines		303,834.82		303,834.82
407	Hwy. 115–Hwy. 27 (Proposed)		310.28		310.28
QEW	Fort Erie–Toronto	93.3	7,721,086.08	892,674.75	8,613,760.83
Total Expenditure Allocated to King's Highways			$100,444,245.42	$ 25,387,149.26	$125,831,394.68
Secondary Highways					
500	McArthur Mills–Hwy. 36 (Bobcaygeon)	76.6	$ 478,815.41	$ 97,360.60	$ 576,176.01
501	Hwy. 103–Honey Harbour	9.2	73,664.97	29,437.38	103,102.35
502	Hwy. 2 (Napanee)–Hwy. 2 (Marysville)	8.7	566.61	147,443.42	148,010.03
503	Hwy. 46 (Kirkfield)–Hwy. 121 (Kinmount)	48.8	281,748.83	96,401.04	378,149.87
504	Sec. Hwy. 620–Hwy. 28	16.3	1,930.85	62,367.08	64,297.93
505	Hwy. 46–Sec. Hwy. 503	12.7	607.01	20,123.97	20,730.98
506	Hwy. 41–Plevna	22.1	120,859.10	26,057.64	146,916.74
507	Hwy. 36–Gooderham	25.5	59,288.58	46,786.45	106,075.03
508	Burnstown–Black Donald Mine	24.0	63,327.88	28,964.89	92,292.77
509	Hwy. 7–Snow Road	13.1	53,117.66	23,034.26	76,151.92
510	Sec. Hwy. 520–Hwy. 124	1.9	16,198.87	5,770.62	21,969.49
511	Brightside–Sec. Hwy. 508 (Calabogie)	20.5	13,531.24	21,962.11	35,493.35
512	Hwy. 41 (Eganville)–Hwy. 60	29.4	196,574.88	34,971.92	231,546.80
513	Hwy. 132 (Dacre)–Hyndford	10.2	289.97	32,088.06	32,378.03
514	Hwy. 35–Interlaken	10.0	61,061.77	31,492.96	92,554.73
515	Quadeville–Hwy. 62 (Combermere)	17.4	82,155.38	33,523.10	115,678.48
516	Port Sidney–Windermere	17.3	2,395.04	22,100.94	24,495.98
517	Hwy. 62–New Carlow	10.4	69.38	22,095.01	22,164.39
518	Kearney Hwy. 69	47.0	144,419.22	90,819.35	235,238.57
519	Hwy. 121–Red Stone Lake	34.0	125,332.15	51,428.87	176,761.02
520	Hwy. 11–Ardberg	33.6	40,740.69	77,111.55	117,852.24
521	Hwy. 62 (S. of Round Lake–N. of Round Lake)	13.2	2,988.28	13,435.81	16,424.09
522	Hwy. 11 (Trout Creek)–Loring	38.2	163,314.32	69,637.47	232,951.79
523	Hwy. 60–Hastings Cty. N. Limits	13.5	14,995.12	30,357.66	45,352.78
524	Sec. Hwy. 522–Sec. Hwy. 534	3.1	4,306.86	7,644.62	11,951.48
525	Gravenhurst–Sanitarium	1.5	7,928.24	2,219.26	10,147.50
526	Hwy. 69 Britt	2.5	6,855.59	13,132.27	19,987.86
527	Hwy. 118 (Baysville)–Huntsville	14.5	46.75	16,292.80	16,339.55
528	Hwy. 64–Wolseley Bay	8.3		23,833.30	23,833.30
528A	Sec. Hwy. 528–Pine Grove Landing	3.3	1,478.00	9,410.98	10,888.98
529	Hwy. 69–Hwy. 69 (Magnetawan)	16.3	190.20	44,760.12	44,950.32
529A	Sec. Hwy. 529–Bayfield Wharf	3.0		5,550.59	5,550.59
530	Sec. Hwy. 519–Hwy. 35	12.5	764.76	35,070.73	35,835.49
531	Hwy. 17–Bonfield	2.4	411.24	5,896.67	6,307.91
532	Hwy. 11–Hwy. 69 (Hays Corners)	40.9	149,895.12	81,782.98	231,678.10
533	Hwy. 17 (Mattawa)–Hwy. 63	34.2	60,688.28	55,935.68	116,623.96
534	Powassan–Restoule	21.7	41,212.00	68,370.42	109,582.42

Highway No.	Location	Mileage	Construction	Maintenance	Total
535	Hwy. 64 (Noelville)–Riviere Veuve	31.1	$ 53,660.68	$ 86,436.31	$ 140,096.99
536	Hwy. 17–Creighton Mine	3.8	4,688.47	13,509.67	18,198.14
537	Hwy. 69–Hwy. 17 (Wanapitei)	13.8	581.39	32,043.98	32,625.37
538	Hwy. 17–East and West of Algoma	3.5	3,154.94	5,272.45	8,427.39
539	Hwy. 17 (Warren)–Hwy. 64 (Field)	26.4	33,961.97	43,433.43	77,395.40
539A	Sec. Hwy. 539–River Valley	0.8	.....	1,636.02	1,636.02
540	Hwy. 68 (Little Current)–Meldrum Bay	85.4	15,645.08	158,674.04	174,319.12
540A	Sec. Hwy. 540–Barrie Island	2.5	.....	3,371.01	3,371.01
541	Hwy. 17 (Sudbury)–Skead	14.7	11,854.54	37,552.82	49,407.36
541A	Sec. Hwy. 541–Falconbridge	2.6	97,549.99	2,938.68	100,488.67
542	Hwy. 68–Sec. Hwy. 540 (Gore Bay)	43.0	64,823.46	97,594.62	162,418.08
542A	Sec. Hwy. 542–Tehkumah	1.4	.....	1,922.61	1,922.61
543	Hwy. 69–Long Lake	5.1	11,194.60	15,379.12	26,573.72
544	Hwy. 17 (Sudbury)–Geneva Lake Mine	60.5	55,784.04	122,507.38	178,291.42
544A	Sec. Hwy. 544–Levack	1.3	.....	1,627.82	1,627.82
545	Sec. Hwy. 541–Milnet	17.0	214,383.74	31,703.12	246,086.86
546	Hwy. 17–Mount Lake	49.8	12,595.76	47,274.14	59,869.90
547	Hwy. 101–Hawk Junction	.....	10,732.89	.....	10,732.89
548	Hwy. 17–St. Joseph Island Road	45.6	20,283.62	76,494.32	96,777.94
549	Lake Panache–Hwy. 17	9.1	13,344.27	34,207.69	47,551.96
550	Hwy. 17 (Sault Ste. Marie)–Gros Cap	13.4	269,823.39	30,820.97	300,644.36
551	Sec. Hwy. 540–Providence Bay	12.2	6,918.38	28,959.62	35,878.00
552	Island Lake–Goulais Bay	13.4	2,363.83	24,778.24	27,142.07
553	Hwy. 17 (Massey)–Richie Falls Camp	50.2	4,329.73	33,018.36	37,348.09
554	Hwy. 129–Sec. Hwy. 546	10.9	22,772.07	12,505.33	35,277.40
555	Sec. Hwy. 557–Granary Lake Landing	7.0	6,315.52	12,885.44	19,200.96
556	Hwy. 17 (Heyden)–Christiana Mine	26.3	25,512.25	75,169.41	100,681.66
557	Hwy. 17 (Blind River)–Matinenda Lake	13.5	156.58	27,758.92	27,915.50
558	Hwy. 11 (Haileybury)–Montreal River	16.8	238,168.72	25,665.01	263,833.73
559	N. of Nobel–N. of Shawanaga	13.5	184.46	21,553.53	21,737.99
560	Hwy. 11 (Englehart)–Gogama	144.5	86,656.14	225,599.16	312,255.30
560A	Sec. Hwy. 560–Westree	6.2	.....	9,739.97	9,739.97
561	Hwy. 17 (Bruce Mines)–Sec. Hwy. 638	12.8	3,913.09	28,912.73	32,825.82
562	Hwy. 11–Hwy. 65	9.2	13,056.26	26,766.90	39,823.16
563	Hwy. 17–Batchawana Bay	3.4	1,327.14	11,747.69	13,074.83
564	Hwy. 112–Blanche River	9.8	.....	18,108.29	18,108.29
565	Sec. Hwy. 550–Pte. Aux Pins	3.5	155,042.54	7,435.88	162,478.42
566	Hwy. 65 (Matachewan)–Ashley Mine	15.6	11,902.81	22,404.72	34,307.53
567	Hwy. 11 (North Cobalt)–Silver Centre	21.7	10,468.28	47,984.21	58,452.49
568	Hwy. 11–Kenogami	1.0	.....	1,614.07	1,614.07
569	Hwy. 11–Jct. Hwys. 11 and Sec. Hwy. 624	17.5	20,164.08	58,093.06	78,257.14
570	Hwy. 11–Sesekinika	2.6	.....	4,840.48	4,840.48
571	Sec. Hwy. 562–Hwy. 11 (Earlton)	3.8	13,730.78	12,282.93	26,013.71
572	Hwy. 11 (Ramore)–Holtyre	5.0	259.59	7,096.99	7,356.58
573	Hwy. 11–Sec. Hwy. 560 (Charlton)	12.5	62.99	21,174.17	21,237.16
574	Norembega–Sec. Hwy. 579	18.0	61,590.30	75,369.14	136,959.44

Highway No.	Location	Mileage	Construction	Maintenance	Total
575	Hwy. 101 (Night Hawk Centre) Southerly	3.0	$	$ 2,548.98	$ 2,548.98
576	Hwy. 101–Waterhen Creek	1.9	.....	3,813.45	3,813.45
577	Hwy. 101 (Shillington)–Hwy. 67 (Ansonville)	15.8	2,660.20	30,162.74	32,822.94
578	Hwy. 11 (Nellie Lake)–Hwy. 67 (Iroquois Falls)	5.1	1,407.34	20,046.56	21,453.90
579	Hwy. 11 (Cochrane)–Gardiner	21.8	29,994.18	57,586.92	87,581.10
580	Hwy. 11–D.H.O. Park (Lake Nipigon)	7.7	5,004.63	6,235.48	11,240.11
581	Hwy. 11–Remi Lake	3.1	8,872.26	1,113.22	9,985.48
582	Hwys. 11 and 17–Hurkett–Hwys. 11 and 17	4.0	3,357.92	4,427.75	7,785.67
583	Mead–Lac Ste. Therese	30.1	327,795.79	82,030.63	409,826.42
584	Hard Rock Mine–Nakina	42.5	71,785.63	50,921.64	122,707.27
584A	Hwy. 11–Sec. Hwy. 584	2.4	.....	594.18	594.18
585	Hwys. 11 and 17–Pine Portage	22.9	14.98	49,489.16	49,504.14
586	Hwy. 11–Lower Shebandowan Lake	3.3	12.17	2,339.06	2,351.23
587	Hwys. 11 and 17–Silver Islet	22.6	2,971.51	44,767.21	47,738.72
588	Hwys. 11 and 17–Round Lake Road	34.8	53,027.28	62,649.97	115,677.25
589	Hwys. 11A and 17A–Dog Lake Road	18.7	16,295.60	38,499.23	54,794.83
590	Hwy. 130–Sec. Hwy. 588	25.1	931.72	46,240.36	47,172.08
591	Sec. Hwy. 589–Northerly	4.9	.....	9,077.58	9,077.58
592	Hwy. 11 (Novar)–Hwy. 11	9.8	1,096.41	13,432.03	14,528.44
593	Sec. Hwy. 588–Silver Mount Road	11.9	90.70	12,044.91	12,135.61
594	Dryden–Hwy. 17	22.6	46,110.13	10,869.82	56,979.95
595	Sec. Hwy. 590–Cloud Lake Road	28.0	13,899.11	44,536.22	58,435.33
596	Hwy. 17 (Keewatin)–Minaki	31.1	11,661.26	45,162.20	56,823.46
596A	Hwy. 17–Pellatt	8.4	.....	9,900.27	9,900.27
597	Sec. Hwy. 595–Sec. Hwy. 608	6.8	.....	9,656.01	9,656.01
598	Sec. Hwy. 604–Hwy. 128	2.7	124.79	3,994.62	4,119.41
599	Savant Lake–Pickle Crow Landing	112.1	823.03	81,530.47	82,353.50
600	Hwy. 71–Hwy. 11 (Rainy River)	59.8	42,741.02	56,192.58	98,933.60
601	Hwy. 17 (Dryden)–Hwy. 17	16.5	10,666.61	25,126.34	35,792.95
602	Fort Frances–Emo	29.1	69,939.31	21,468.50	91,407.81
603	Hwy. 17–Dyment	2.8	635.99	1,021.27	1,657.26
604	Kenora–Hwy. 128	17.8	3,497.99	18,630.96	22,128.95
605	Hwy. 17–Rugby Lake	7.7	1,658.97	5,845.68	7,504.65
606	Hwy. 17– Markstay	1.0	372.23	2,115.23	2,487.46
607	Hwy. 64–French River	7.4	4,706.00	19,345.11	24,051.11
607A	Sec. Hwy. 607–Hwy. 69	0.4	.....	734.57	734.57
608	Hwy. 61 (Moose Hill)–Sec. Hwy. 595	11.9	28,091.54	24,088.97	52,180.51
609	Hwy. 105–Clay Lake Landing	10.1	39,418.04	2,520.34	41,938.38
610	Hwy. 67–Hwy. 101	12.6	15,033.86	19,406.99	34,440.85
611	Sec. Hwy. 602–LaVallee Northerly	12.5	189.21	12,399.92	12,589.13
612	Hwy. 103–Hwy. 69 (Gordon Bay)	7.0	2,760.86	13,060.43	15,821.29
613	Sec. Hwy. 602–Lake Despair Landing	25.5	51,354.86	36,740.24	88,095.10
614	Hwy. 17–Manitouwadge	37.1	85,227.37	79,410.39	164,637.76
615	Hwy. 71–Lake Despair	14.4	2,735.99	19,348.38	22,084.37
616	Hwy. 101–Palomer (C.N.R.)	2.0	.....	658.33	658.33
617	Hwy. 11 (Stratton)–Sec. Hwy. 600	14.4	4,276.59	17,587.63	21,864.22
618	Hwy. 105–Madsen	8.8	281,307.31	5,658.39	286,965.70

Highway No.	Location	Mileage	Construction	Maintenance	Total
619	Hwy. 11 (Pinewood)–Sec. Hwy. 621	25.3	$ 12,522.15	$ 24,750.40	$ 37,272.55
620	Hwy. 62–Hwy. 28	26.4	212,486.17	24,773.87	237,260.04
621	Hwy. 11 (Sleeman)–Lake of the Woods Dock	32.8	45,222.23	72,823.42	118,045.65
622	Hwy. 11 (Atikokan) Northerly	5.3	.....	10,239.20	10,239.20
623	Hwy. 11–Sapawe	3.3	12,172.54	8,460.61	20,633.15
624	Hwy. 11 and Sec. Hwy. 569–Larder Lake	27.0	48,100.45	33,645.70	81,746.15
625	Caramat–Hwy. 11	20.0	13,439.33	36,251.95	49,691.28
626	Hwy. 11–Hwy. 67 (Porquis Jct.)	19.8	.....	19,765.79	19,765.79
627	Hwy. 17–Heron Bay	5.2	217.84	6,386.97	6,604.81
628	Hwys. 11 and 17–Red Rock	4.4	5,579.86	5,946.68	11,526.54
629	Hwy. 101–Timmins Airport	6.7	269.93	19,705.69	19,975.62
630	Hwy. 17–Kiosk	18.5	85,846.73	41,652.05	127,498.78
631	Hornepayne–Hwy. 11	46.6	85,942.86	84,647.92	170,590.78
632	Sec. Hwy. 532–Hwy. 118 (Port Carling)	16.0	7,027.50	34,440.74	41,468.24
633	Hwy. 11–Kawene	3.7	.....	2,448.14	2,448.14
634	Hwy. 69 (Val Caron)–Sec. Hwy. 544	11.8	21,488.26	25,453.31	46,941.57
635	Hwy. 17–Ottawa River	1.6	40.96	3,758.18	3,799.14
636	Hwy. 11–Frederickhouse Stn.	2.0	25,201.13	5,401.78	30,602.91
637	Killarney–Hwy. 69	41.8	333,898.52	17,463.87	351,362.39
638	Hwy. 17–Dunns Valley	23.9	30,598.81	31,602.36	62,201.17
639	Hwy. 108–Sec. Hwy. 546	.....	9,667.46	.....	9,667.46
Total Expenditure Allocated to Secondary Highways			$6,043,001.74	$4,805,186.58	$10,848,188.32
Tertiary Roads					
801	Hwy. 11 (Nezah)–Sturgeon River Mine	.....	$ 11,626.82	$ 4,929.99	$ 16,556.81
802	Hwy. 11 (Kashabowie)–Burchell Lake Rd.	8.5	14,934.12	4,807.14	19,741.26
804	Hwy. 105 Westerly–Manitou Falls Road	12.8	6,720.14	2,494.29	9,214.43
Total Expenditures Allocated to Tertiary Roads			$ 33,281.08	$ 12,231.42	$ 45,512.50
	Ferries			333,925.96	333,925.96
	Yonge St. (Toronto)		851.00		851.00
	Eglinton Ave. (Toronto)		25.00		25.00
	Queensway, Ottawa		3,716,215.42	1,908.29	3,718,123.71
	Pelee Island			3,413.12	3,413.12
	Hill Island Road		2.18	5,423.98	5,426.16
	Chapleau–Foleyet		75.00	.....	75.00
	Savant Lake–Sturgeon River		4,432.99	13,201.67	17,634.66
	Durer Lake Road (Terrier Lake)–Anaconda			6,100.04	6,100.04
	Wasaga Beach By-pass		350.00		350.00
	Port Arthur, Fort William Ring Road		75.26		75.26
	Alcona Access Road–Sioux Lookout		4,555.51	50.83	4,606.34
	Panel Mine Road–Elliot Lake I.D.			7,753.07	7,753.07
	Denison Mine Road–Elliot Lake I.D.			4,788.39	4,788.39
	Shamrock Mine Road–Elliot Lake I.D.			24,414.88	24,414.88
	Milliken Mine Road–Elliot Lake I.D.			7,428.18	7,428.18
	Algoma–Nordic Mine Road–Elliot Lake I.D.			3,918.97	3,918.97
	Malton Airport Road		346,649.75	30.72	346,680.47
	Sudbury By-pass		1,750.00		1,750.00

Location	Construction	Maintenance	Total
Northern Lights Lake Road	$ 126,122.05	$ 76.40	$ 126,198.45
Missanabie–Dalton	177,571.76		177,571.76
Matachewan Westerly from Sec. Hwy. 566	17,670.03		17,670.03
Alice Township Line–Ignace Lake	129,324.81		129,324.81
Forest Access Roads			
Black Donald Road	16,312.61		16,312.61
Watt Lake Road	17,486.50		17,486.50
Two Islands Lake–Griffith Township	5,912.63		5,912.63
Hindon Township Road	21,962.73		21,962.73
Henry–Crerar Township Road	15,220.68		15,220.68
Kemp–Sothman Township Road	6,238.41		6,238.41
Spear Lake Road	1,997.79		1,997.79
Scarfe Township Road	10,034.10		10,034.10
Franklin Lake Road	7,911.56		7,911.56
Racine, Floranna, Mageau and Manning Townships Road	32,210.44		32,210.44
Hawk Jct. Road–Michipecoten Twp.		7,607.53	7,607.53
Minaki Road South	Cr. 348.90		Cr. 348.90
Sidewalks	15,614.69	679.23	16,293.92
Miscellaneous Surveys	409,604.27		409,604.27
Connecting Links	3,063,498.30	255,828.16	3,319,326.46
Unincorporated Township Roads	453,031.83	674,527.76	1,127,559.59
Development Roads	7,636,083.90	110,365.91	7,746,449.81
HIGHWAY TOTALS	$122,758,970.54	$ 31,666,010.35	$154,424,980.89
Sundry Unallocated, District Office, Administrative, Engineering, Building, Inventory Charges, etc.	$ 484,101.87	$ 7,523,719.88	$ 8,007,821.75
TOTAL EXPENDITURES	$123,243,072.41	$ 39,189,730.23	$162,432,802.64

[ ] Indicates that two highways share the same route; mileage for the section shared is shown against the bracketed highway.

APPENDIX No. 3

SCHEDULE OF CONTROLLED ACCESS HIGHWAYS

April 1, 1962 to March 31, 1963

Hwy. No.		Designated by Ontario Regulation Number	Mileage
7	Twp. of Markham	248/62	3.78
7	Peterborough By-pass Twp. of North Monaghan	181/62	3.92
14	Foxborough By-pass Twps. of Sidney and Thurlow	180/62	2.50
17	Vermillion River to Copper Cliff		
	Town of Copper Cliff		1.59
	Twp. of Snider		1.46
	Twp. of Waters		5.53
	Twp. of Graham	306/62	4.72
	Ottawa By-pass City of Ottawa	151/62	0.70
24	Twps. of Windham and Townsend	307/62	9.15
41	Sophiasburgh Division		
	Twp. of Sophiasburgh		4.10
	Twp. of Tyendinaga	307/62	0.70
58	Twp. of Humberstone	314/62	4.39
61	Pigeon River Diversion Twp. of Pardee	266/62	2.76
126	Highbury Avenue Extension Twp. of Westminster	180/62	3.18
403	Toronto to Woodstock		
	Twp. of Etobicoke		0.75
	Twp. of Toronto		9.70
	Town of Oakville		9.55
	Town of Burlington		6.76
	Twp. of West Flamborough		0.68
	Twp. of Ancaster		6.30
	Twp. of Brantford		5.31
	Twp. of Brantford		2.50
	Twp. of Brantford		0.60
	Twp. of Brantford		6.36
	Twp. of Burford		9.20
	Twp. of East Oxford	286/62	4.80
Q.E.W.	Toronto to Fort Erie		
	Town of Burlington		8.30
	City of Hamilton		6.48
	Twp. of Saltfleet	1/63	5.80
	City of Toronto		0.46
	City of St. Catharines		4.28
	Twp. of Niagara	53/63	3.14
	Twp. of Bertie	150/62	0.71
	Rainbow Bridge Cut-off City of Niagara Falls	54/63	2.53
401	Toronto to Quebec Boundary		
	Castleton Road		
	Twp. of Cramahe	178/62	

Hwy. No.		Designated by Ontario Regulation Number	Mileage
401	Toronto to Windsor		
	Highway 4		
	Twp. of Westminster	16/63	
	Highway 21		
	Twp. of Howard	17/62	
Q.E.W.	Toronto to Fort Erie		
	Highway 122		
	Town of Oakville	43/63	
	Highway 2		
	Town of Burlington and		
	City of Hamilton	1/63	
	Ontario Street		
	Twp. of Clinton	53/63	
	Ontario Street		
	City of St. Catharines	53/63	
	Niagara Street		
	City of St. Catharines	53/63	
Total Mileage as of March 31, 1963			1,474.92
Total Mileage Designated During Fiscal Year Ending March 31, 1963			142.69

APPENDIX No. 3A

SCHEDULE OF DESIGNATIONS AND RE-DESIGNATIONS OF SECTIONS OF THE KING'S HIGHWAY, SECONDARY HIGHWAY AND TERTIARY ROAD SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1963

This schedule includes:

1. Designations of (a) Newly assumed highways.
   (b) Newly constructed highways and diversions.
   (c) Interchanges.
2. Re-Designations of widened highways.

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2256-26	Korah	Oct. 18/62	550	2.100
	P-2424-46	Tarentorus	Jan. 31/63	17 T.C.	6.810
	P-3238-6	30, Range 24	May 17/62	17 T.C.	6.770
Brant	P-5041-3	Brantford	June 28/62	403	6.360
	P-5041-4	Brantford	July 12/62	403	5.310
	P-4043-1	Burford	June 7/62	403	9.200
Carleton	P-3409-16	City of Ottawa	April 5/62	Ottawa Qwy.	0.680
	P-3409-20	City of Ottawa	Feb. 21/63	Ottawa Qwy.	0.430
	P-3409-21	City of Ottawa	Feb. 21/63	Ottawa Qwy.	0.260
	P-3409-22	City of Ottawa	Feb. 21/63	Ottawa Qwy.	0.380
	P-3409-23	City of Ottawa	Feb. 21/63	Ottawa Qwy.	0.410
	P-3409-24	City of Ottawa	Feb. 21/63	Ottawa Qwy.	0.450
Durham	P-3398	Hope	Feb. 28/63	106	2.640
Grenville	P-6019-2	Oxford	Aug. 11/62	43	0.230

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Halton	P-2070-129	Nelson	Oct. 18/62	Q.E.W.	0.570
	P-2811-12	Nelson	July 12/62	403	6.760
	P-5015-3	Trafalgar	July 12/62	403	9.550
Hastings	P-2563-12	Sidney and Thurlow	April 7/62	14	1.700
	P-6028-1	Tyendinaga	Sept. 20/62	41	0.760
Huron	P-2059-31	Hay	July 12/62	21	8.400
	P-2834-12	Stephen	Sept. 14/62	81	5.720
Kenora	P-3200-1	Cathcart	Mar. 7/63	17 T.C.	2.670
	P-3182-5	Gorman	Jan. 24/63	17 T.C.	6.900
	P-3153-1	Dewan	Jan. 31/63	15 T.C.	6.500
	P-2499-8	Forgie	May 17/62	17 T.C.	6.000
	P-2401-6	Ilsley	Jan. 31/63	17 T.C.	6.890
	P-3183-2	McNevin	Sept. 27/62	17 T.C.	6.410
	P-3207-9	Osaquan	Mar. 7/63	17 T.C.	1.360
	P-2952-5	Revell	Feb. 21/63	17 T.C.	6.500
	P-3155-1	Skey	Jan. 24/63	17 T.C.	3.270
	P-2666-4	Tustin	Mar. 7/63	17 T.C.	6.500
	P-8044	Unsurveyed Territory	April 25/62	804	12.750
Kent	P-1932-28	Camden	Dec. 6/62	2	6.360
	P-2809-23	Chatham	Dec. 6/62	2	8.290
	P-1951-19	Raleigh	Nov. 15/62	2	7.340
	P-1418-24	Zone	Dec. 6/62	2	7.300
Lambton	P-1994-19	Bosanquet	June 28/62	82	5.170
	P-2072-11	Bosanquet	Mar. 29/62*	7	6.430
	P-2110-45	Bosanquet	June 28/62	21	9.156
	P-2110-46	Bosanquet	June 14/62	21	11.340
	P-2045-23	Warwick	May 17/62	7	7.640
	P-2045-24	Warwick	June 7/62	7	4.650
Leeds	P-6039	Escott	Feb. 28/63	401	6.400
	P-6035	Leeds and Landsdowne	Dec. 20/62	401	9.120
	P-6036	Yonge and Elizabethtown	Sept. 27/62	401	7.280
Lincoln	P-3381-15	Niagara	Aug. 2/62	8	2.570
Manitoulin	P-3186-2	Carlyle	June 28/62	637	6.390
	P-3187-5	Humboldt	Mar. 7/63	637	5.260
	P-3185-5	Killarney	Oct. 18/62	637	6.450
	P-3184-17	Rutherford	Jan. 31/63	637	4.510
Middlesex	P-1421-76	London	Mar. 29/62*	4	2.250
	P-4009-9	City of London and Twp. of Westminster	April 17/62	126	3.180
	P-2834-12	McGillivray and West Williams	(See Huron County)		
	P-3298-15	Westminster	June 28/62	135	3.300
	P-3053-130	Westminster	Nov. 22/62	401	Interchange
Muskoka	P-2537-59	Monck	Apr. 5/62	118	6.060
Norfolk	P-4045	Windham and Townsend	Nov. 15/62	24	9.150
Ontario	P-2269-12	Uxbridge	July 12/62	47	10.450
Oxford	P-2848-18	Blandford	Apr. 17/62	97	3.900
	P-4044	East Oxford	June 14/62	403	4.800
	P-3015-17	West Oxford	July 12/62	19	1.970
Parry Sound	P-2373-21	Machar	Mar. 29/62*	11	1.250

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles Miles
Peel	P-2093-36	Albion	Jan. 17/63	50	10.960
	P-2199-19	Albion	Dec. 6/62	9	1.060
	P-2247-7	Albion	Dec. 6/62	9	6.130
	P-5005-4	Toronto	July 12/62	403	9.700
Peterborough	P-2096-18	Duoro	Dec. 20/62	28	4.160
	P-3295-33	North Monaghan	May 17/62	7	3.920
	P-1955-42	Smith	Nov. 22/62	28	4.320
	P-1955-43	Smith	Dec. 6/62	28	5.600
Simcoe	P-1838-22	Essa and Tecumseth	Oct. 14/62	89	8.332
Sudbury	P-3191-2	Atlee	Aug. 2/62	637	6.680
	P-7029-2	Carty	Mar. 21/63	101	3.860
	P-3002-4	Chapleau	Sept. 14/62	129	2.400
	P-2139-64	Dryden	Sept. 14/62	17	6.620
	P-7032-2	Evans	Dec. 20/62	101	2.270
	P-2427-34	Graham	Sept. 20/62	17 T.C.	4.720
	P-7034-2	Hellyer	Jan. 31/63	101	4.510
	P-7037-2	Ivanhoe	Jan. 31/63	101	3.770
	P-2148-21	McKim	July 12/62	17 T.C.	1.590
	P-7030-2	Pinogami	Oct. 25/62	101	6.240
	P-3188-3	Sale	Oct. 25/62	637	1.000
	P-3194-2	Servos	Sept. 27/62	637	3.300
	P-3005-7	Snider	Aug. 2/62	17 T.C.	1.460
	P-3190-2	Woldie	Sept. 27/62	637	5.730
	P-3014-33	Waters	Sept. 27/62	17 T.C.	5.530
Temiskaming	P-2368-18	Chamberlain	June 7/62	11	6.920
	P-2371-10	Dack	Mar. 29/62*	11	1.280
	P-2363-18	Pacaud	June 7/62	11	3.560
Thunder Bay	P-3531-3	Ashmore	June 14/62	584	0.450
	P-2161-13	88	Sept. 27/62	17 T.C.	6.550
	P-3055-9	85	Aug. 30/62	17 T.C.	6.600
	P-2162-32	84	Oct. 18/62	17 T.C.	7.400
	P-3029-14	89	Oct. 4/62	17 T.C.	7.000
	P-2832-27	86	Oct. 25/62	17 T.C.	10.910
	P-3426-6	Errington	May 17/62	584	1.780
	P-3428-2	Exton	May 17/62	584	7.440
	P-3430-3	Fulford	May 17/62	584	2.680
	P-3425-2	McQuesten	June 14/62	584	5.900
	P-3427-7	Nakina	May 17/62	584	1.770
	P-3279-6	90	Sept. 27/62	17 T.C.	2.910
	P-3285-11	91	Sept. 14/62	17 T.C.	7.500
	P-3284-4	92	Sept. 14/62	17 T.C.	7.600
	P-2763-31	Pardee	May 17/62	61	2.760
	P-3429-3	Unsurveyed Territory	Oct. 25/62	584	20.500
	P-8043	Unsurveyed Territory	May 24/62	802	8.500
Victoria	P-2539-7	Mariposa	Jan. 24/63	46	5.480
Waterloo	P-2078-15	Waterloo	July 12/62	85	1.060
	P-1979-21	Woolwich	Aug. 2/62	85	5.870
Welland	P-2086-8	Humberstone	Nov. 22/62	58	0.425
Wentworth	P-2113-217	Saltfleet	Oct. 4/62	Q.E.W.	6.480
	P-2486-22	West Flamborough	June 28/62	403	0.680
York	P-1960-112	Etobicoke	Dec. 20/62	Q.E.W.	0.460
	P-5046	Etobicoke	June 28/62	403	0.750
	P-1980-42	East Gwillimbury	Nov. 15/62	11	4.490
	P-1658-69	Markham	June 28/62	7	3.780

* Omitted from last year's report.

APPENDIX No. 3B

SCHEDULE OF REVERSIONS AND TRANSFERS OF SECTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1963

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Cochrane	P-2242-35	Carr and Bowman	Apr. 1/62	11 and 101	0.820
	P-2697-20	Mountjoy	Aug. 11/62	101	2.030
Dundas	P-2451-32	Village of Chesterville	Jan. 19/63	43	0.340
	P-1929-33	Matilda	July 28/62	2	0.830
	P-1541-24	Village of Morrisburg	July 28/62	2	0.980
Durham	P-2704-74	Clarke	June 23/62	401	0.019
	P-2704-75	Clarke	June 23/62	401	0.015
	P-3103-93	Hope	Apr. 28/62	401	0.046
	P-3103-101	Hope	July 7/62	401	0.330
	P-3103-104	Hope	Sept. 1/62	401	0.120
Elgin	P-3248-18	Bayham	Apr. 28/62	3	0.057
	P-3248-19	Bayham	May 5/62	3	0.028
	P-2058-75	Yarmouth	Oct. 27/62	3	0.015
Essex	P-1913-26	Town of Amherstburg	June 2/62	18	0.090
	P-2966-18	Sandwich East and Maidstone	Aug. 10/62	39	4.784
Grey	P-1985-30	Bentinck	July 12/62	4	0.500
Haliburton	P-2738-19	Cardiff	Apr. 1/62	500	0.040
Halton	P-1738-33	Trafalgar	Apr. 28/62	25	0.320
	P-1738-35	Trafalgar	Mar. 2/63	25	0.750
Hastings	P-6029	Faraday and Herschel	Aug. 11/62	500	9.000
	P-1945-12	Village of Marmora	June 2/62	7 T.C.	1.360
	P-3060-38	Sidney	June 5/62	401	0.230
Huron	P-2029-15	Town of Seaforth	Oct. 14/62	8	0.220
Kent	P-1975-61	Chatham, Dover and City of Chatham	Aug. 10/62	40	1.000
	P-1951-21	Raleigh	Jan. 19/63	2	0.070
Leeds	P-2067-11	Village of Westport	Feb. 23/63	42	0.100
Lennox and Addington	P-2069-60	Ernestown	Feb. 23/63	33	0.640
Lincoln	P-1940-21	Grantham	Nov. 29/62	8	0.820
	P-1940-22	Grantham	Nov. 29/62	8	1.230
	P-2712-10	Grantham	Nov. 29/62	58	2.350
Middlesex	P-1691-57	Biddulph	Apr. 5/62	4	0.410
	P-1421-90	City of London	Jan. 12/63	4	1.705
	P-3053-132	Westminster	Jan. 19/63	401	0.330
	P-3053-135	Westminster	Feb. 2/63	401	0.130
Northumberland	P-3179-75	Haldimand	Apr. 28/62	401	0.550
	P-3179-80	Haldimand	June 2/62	401	0.135
	P-3080-93	Hamilton	July 12/62	401	0.580
Parry Sound	P-2910-74	North Himsworth	Aug. 11/62	11	4.200
	P-7100	North Himsworth	Aug. 11/62	94	0.310
	P-2130-63	South Himsworth	Apr. 1/62	11	3.470
	P-2130-64	South Himsworth	Apr. 1/62	11	0.970
	P-3304-2	South Himsworth	Apr. 1/62	534	0.310

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Prescott	P-1981-35	East Hawkesbury	Mar. 2/63	17	0.230
	P-1881-15	Town of Vankleek Hill	Dec. 14/62	34	0.800
Renfrew	P-2609-21	Admaston	July 13/62	132	0.700
Simcoe	P-2756-81	Innisfil	Jan. 19/63	400	0.250
	P-2145-16	West Gwillimbury	Nov. 17/62	11	0.740
	P-2969-13	West Gwillimbury	Oct. 27/62	88	0.540
Sudbury	P-2302-49	Merritt	Sept. 2/62	68	2.690
Thunder Bay	P-3281-4	Gertrude and Leslie	Feb. 21/63	614	2.570
Victoria	P-1946-27	Harvey	Oct. 27/62	7	1.790
	P-2457-7	Harvey	Oct. 20/62	500	0.240
	P-1946-29	Ops	May 25/62	7	1.840
Waterloo	P-1812-21	City of Galt	Sept. 1/62	8	0.110
Wentworth	P-1459-20	Barton	Feb. 23/63	6	1.860
	P-1977-66	Glanford	Feb. 23/63	6	0.370
York	P-1574-35	Etobicoke	Aug. 30/62	5	2.650
	P-1960-107	Etobicoke	Dec. 20/62	Q.E.W.	0.150
	P-1960-109	Etobicoke	Oct. 20/62	Q.E.W.	0.075
	P-1960-111	Etobicoke	Oct. 20/62	Q.E.W.	0.410

APPENDIX No. 3C

SCHEDULE OF EXISTING ROADS ASSUMED AS PORTIONS OF THE KING'S HIGHWAY, SECONDARY HIGHWAY AND TERTIARY ROAD SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1963

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2256-26	Korah	Sept. 6/62	550	2.100
	P-2424-43	Tarentorus	Oct. 1/62	17 T.C.	0.066
	P-8012-5	29, Range 23	Sept. 24/62	101	0.283
Bruce	P-2337-25	Kincardine	Sept. 6/62	21	0.180
Cochrane	P-8029-2	Clute	July 27/62	636	1.000
Dundas	P-6020-1	Mountain	Jan. 4/63	43	2.500
Essex	P-2959-71	Sandwich South	Nov. 14/62	401	0.056
Grenville	P-6019-3	Oxford	Mar. 18/63	43	1.360
	P-6038	South Gower	Jan. 24/63	43	2.050
Grey	P-1969-31	Holland	June 20/62	6	0.012
Haldimand	P-2464-49	Oneida	Sept. 24/62	6	0.057
Hastings	P-6029-1	Village of Bancroft (Twp. of Faraday)	Sept. 13/62	500	0.540
	P-1945-13	Marmora	Mar. 19/63	7	1.480
Huron	P-1860-34	Town of Clinton (Twp. of Hullett)	June 25/62	4	0.100
	P-2543-37	Goderich	Nov. 1/62	21	0.066
Kenora	P-8044	Unsurveyed Territory	Mar. 29/62*	804	12.750

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Kent	P-1438-13	Tilbury East	Sept. 19/62	3	0.023
Lambton	P-2359-14	Plympton	Jan. 25/63	21	0.090
Lanark	P-1916-19	Ramsay	Jan. 3/63	29	1.590
Lennox and Addington	P-3173-92	Ernestown	Sept. 31/62	401	0.080
Lincoln	P-3381-11	Niagara	June 5/62	8	2.600
Norfolk	P-2267-5	South Walsingham	May 17/62	59	0.850
	P-4045	Windham and Townsend	Nov. 12/62	24	9.150
Oxford	P-3162-56	Blenheim	Aug. 15/62	401	0.300
Peel	P-1857-233	Toronto	Sept. 28/62	Q.E.W.	0.230
	P-5047-3	Toronto	Nov. 29/62	New Airport Road	0.420
Prince Edward	P-2801-17	Sophiasburgh	Jan. 7/63	14	1.110
Renfrew	P-2571-1	Bagot	Apr. 17/62	511	2.270
	P-2571-3	Bagot	May 2/62	511	2.960
	P-6025-1	Lyndoch	Feb. 4/63	515	0.250
	P-1559-27	Pembroke	Sept. 25/62	17	5.800
	P-6009-4	Raglan	May 2/62	515	2.840
Simcoe	P-2429-18	Vespra	July 19/62	90	0.046
Sudbury	P-3002-4	Chapleau	Aug. 10/62	129	2.400
Thunder Bay	P-2156-40	Paipoonge	July 26/62	17 T.C.	0.750
	P-8043	Unsurveyed Territory	Apr. 19/62	802	8.500
Welland	P-2425-90	Stamford	Aug. 30/62	Rainbow Bridge Cut-off	0.440
Wellington	P-2077-48	Village of Arthur	June 14/62	6	0.019
York	P-1960-110	Etobicoke	June 25/62	Q.E.W.	0.118
	P-2770-443	North York	Nov. 9/62	401	0.067

* Omitted from last year's report.

APPENDIX No. 4

BRIDGES COMPLETED DURING 1962

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Alder Creek Bridge	Concrete rigid frame	45′	Hwy. 97 Galt–Hickson	Blenheim	4	XII–XIII	Oxford	3
Ausable River Bridge	Concrete rigid frame	27′	Hwy. 4 Clinton–Exeter	Hay– Tuckersmith	16 & 1	I	Huron	3
Bank St. Bridge 21	Concrete rigid frame	60′	Ottawa Queensway	.....	....	....	Carleton	9
Barron River Bridge	Steel beam, simply supported	42′-10¼″	Park Access Rd.	Master	1	XIII	Nipissing	10
Bear Creek Bridge at Brigden	Steel beam, simply supported	50′/64′/50′	Development Rd. 471 Alvinston–Courtright	Moore	9	IV–V	Lambton	1
Bissett Creek Bridge	Steel beam, simply supported	56′/76′-9″/76′	Hwy. 17 North Bay–Pembroke	Maria	56	B	Renfrew	13
Black Creek Bridge (West Branch)	Concrete rigid frame	40′	Development Rd. 471 Alvinston–Courtright	Enniskillen	13	IV–V	Lambton	1
Blockline Road and Grand River Rlwy.	Continuous prestressed concrete girder (dual)	37′-6″/73′-6″ 73′-6″	Hwy. 8 New Hwy. 8–Freeport	Waterloo	53	....	Waterloo	3
Bloomfield Road (Raleigh Twp. Bridge 5)	Continuous "T" beam	40′/69′/69′/40′	Hwy. 401 Tilbury–Hwy. 21	Raleigh	18–19	A–VII	Kent	1
Booth St. Bridge 17	Concrete rigid frame (dual)	60′-6″	Ottawa Queensway	.....	....	....	Carleton	9
Brookdale Interchange (Cornwall Twp. Bridge 10)	Continuous "T" beam	4 @ 90′-1⅛″	Hwy. 401 Long Sault–Lancaster	Cornwall	12–13	III	Stormont	9
Catfish Creek Bridge	Concrete rigid frame	60′	Hwy. 3 St. Thomas–Aylmer	Yarmouth	27	VIII–IX	Elgin	2
Charing Cross Co. Rd. (Raleigh Twp. Bridge 1)	Steel plate girder, simply supported	43′/66′/66′/43′	Hwy. 401 Tilbury–Hwy. 21	Raleigh	24	VIII	Kent	1
Charlottenburg Twp. Bridge 4 (West Bound Lane)	Steel beam, simply supported	69′-4″/70′ 69′-4″	Hwy. 401 Long Sault–Lancaster	Charlottenburg	4	II	Glengarry	9
Charlottenburg Twp. Bridge 10 (West Bound Lane) (C.N.R.)	Continuous boat type	55′/80′/55′	Hwy. 401 Long Sault–Lancaster	Charlottenburg	K	I	Glengarry	9
Chesapeake & Ohio Rlwy. Overhead (Harwich Twp. Bridge 14)	Continuous steel beam (dual)	50′/65′/50	Hwy. 401 Tilbury–Hwy. 21	Harwich	27	I	Kent	1

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Consecon River Bridge	Concrete rigid frame	60′	Hwy. 33 Hillier–Consecon	Hillier–Ameliasburg	....	....	Pr. Edward	7
County Road 19 (Cornwall Twp. Bridge 9)	Steel beam, simply supported (dual)	36′	Hwy. 401 Cornwall Centre Grant Corner	Cornwall	15	III–IV	Stormont	9
County Road 14 (Harwich Twp. Bridge 13)	Continuous boat type	2 @ 46′, 2@ 83′-8″	Hwy. 401 Tilbury Hwy. 21	Harwich	26	I.W.C.R.	Kent	1
Cornwall Twp. Bridge 16 (West Bound Lane) (C.P.R.)	Steel beam, simply supported	2 @ 61′-4″ 6 @ 62′	Hwy. 401 Cornwall–Lancaster	Cornwall	C	II	Stormont	9
Courtice Road (Darlington Twp. Bridge 4)	Concrete rigid frame	34′	Hwy. 401 Oshawa–Port Hope	Darlington	29	B.F.	Durham	7
C.P.R. Overhead Bridge 14	Continuous boat type (dual)	59′-10¼″ 59′-11⅛″/60′ 60′-0¾″ 40′-0⅞″	Ottawa Queensway	....	....	....	Carleton	9
Credit River at Erindale	Steel plate girder, simply supported (dual)	130′	Hwy. 5	Toronto	8	Range I	Peel	6
Credit River at Norval (North Bridge)	Prestressed concrete girder, continuous	37′/45′/37	Hwy. 7 Brampton–Georgetown	Esquesing	12	XI	Halton	4
Cripple Creek Bridge	Steel beam, timber deck	23′-4″/58′ 23′-4″	Hwy. 101 Timmins Polyet	Denton	....	....	Timiskaming	14
Currie Road (Dunwich Twp. Bridge 9)	Prestressed concrete girder, semi-continuous	40′/69′/69′/40′	Hwy. 401 Tempo Elgin/Kent Co. Line	Dunwich	12–13	V.N.	Elgin	2
Deception Creek at Hunta	Creosoted timber	2 @ 13′-3″ 5 @ 16′	Old Hwy. 11 Cochrane Smooth Rock Falls	Colder/Clute	1 and 28	VI	Cochrane	16
Dickenson Drive (Osnabruck Twp. Bridge 3A)	Continuous boat type	40′/76′/76′/40′	Hwy. 401 Cornwall Prescott	Osnabruck	19–20	II–III	Stormont	9
Dodds Creek Bridge North Service Road	Concrete rigid frame	33′	Hwy. 401 (North Service Road) Tempo Elgin/Kent Co. Line	Delaware	24	IV	Middlesex	2
Dodds Creek Bridge South Service Road	Concrete rigid frame	50′	Hwy. 401 (South Service Rd.) Tempo Elgin/Kent Co. Line	Southwold	24	III	Elgin	2

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Elgin County Road 19 (Southwold Twp. Bridge 6)	Continuous steel beam	40′/61′/61′/40′	Hwy. 401 Tempo–Elgin/Kent Co. Line	Southwold	1 and 18	III	Elgin	2
Eneas Creek Bridge	Laminated timber	31′	Municipal Rd. Village of Quadeville	Lyndoch and Brudenell	22–23	XIII	Renfrew	10
Fleming Creek Bridge (Aldborough Twp. Bridge 12)	Concrete rigid frame (dual)	27′-7″ Line	Hwy. 401 Tempo-Elgin/Kent Co. Line	Aldborough	1	VI	Elgin	2
Grindstone Creek Bridge (Flamborough E. Twp. Bridge 13)	Concrete arch	44′-3″	Hwy. 403 Burlington-Hamilton	(Formerly Flamborough E. Town of Burlington	8	I	Halton	4
Halton Co. C.N.R. Overhead	Steel beam, simply supported	46′-4″/51′-8″ 45′-6″/46′-4″	County Rd. Aldershot–Waterdown	(Formerly Flamborough E.) Town of Burlington	6–7	I	Halton	4
Hamilton Creek Bridge at Holland Centre	Prestressed hollow slab, simply supported	48′-5″	Hwy. 10 Chatsworth–Markdale	Holland	33	Range I	Grey	5
Harmer Ave. Bridge 9 Pedestrian Overpass	Special prestressed girder	118′	Ottawa Queensway	.....	....	....	Carleton	9
Harmony River Bridge	Triple concrete box culvert	3 @ 20′	Hwy. 17 T.C.H. Havilland Bay–Chippewa River	Havilland	....	Sec. 13	Algoma	18
Hidden Valley Road (Flamborough E. Twp. Bridge 14)	Concrete barrel arch	48′	Hwy. 403 Burlington- Hamilton	(Formerly Flamborough E.) Town of Burlington	8	I	Halton	4
Hoggs Hollow East Bd. (Alterations)	Welded steel girder approach spans, simply supported	2 @ 56′-6″	Hwy. 401 Toronto By-pass	North York	13	I	York	6
Hoggs Hollow East Bd. Deck Repair	.....	.....	Hwy. 401 Toronto By-pass	North York	13	I	York	6
Holt Road (Darlington Twp. Bridge 8)	Continuous prestressed girder	2 @ 40′ 2 @ 63′-3″	Hwy. 401 Oshawa–Port Hope	Darlington	20–21	B.F.	Durham	7
Humber River (Wallace Bridge)	Steel beam, simply supported	60′/70′/60′	Hwy. 7 Brampton–Thornhill	Vaughan	5–6	VII	York	6
Hurontario St.	Prestressed girder, simply supported	87′	Q.E.W. at Hwy. 10	Toronto	1	Range 2–3	Peel	6

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Hwy. 403–Ramp "R" Underpass, Chedoke Bridge 5	Continuous box girder	71′/99′-6″/51′	Hwy. 403 Burlington–Hamilton	W. Flamborough			Wentworth	4
Hwy. 403–C.P.R. Subway–Chedoke Bridge 9	Steel plate girder, simply supported	72′-6″/72′/72′ 72′-6″	Hwy. 403 Burlington–Hamilton	W. Flamborough			Wentworth	4
Hwy. 403–Guelph Rd. Overpass–Chedoke Bridge 11	Concrete rigid frame	40′	Hwy. 403 Burlington–Hamilton	W. Flamborough			Wentworth	4
Hwy. 403–York Blvd. Underpass–Chedoke Bridge 12	Concrete rigid frame	36′	Hwy. 403 Burlington–Hamilton	W. Flamborough			Wentworth	4
Hwy. 403–Desjardin Canal West Bound Lane Chedoke Bridge 13	Continuous steel beam	57/80′/57′	Hwy. 403 Burlington–Hamilton	W. Flamborough			Wentworth	4
Hwy. 403–Main St. Underpass–Chedoke Bridge 21	Continuous steel plate girder	38′/80′/85′ 82′/55′	Hwy. 403 Burlington–Hamilton	W. Flamborough			Wentworth	4
Hwy. 403–Main-King Culvert Chedoke Bridge 27	Twin box culvert	12′ x 11′/14′ x 11′/15′ x 11′	Hwy. 403 Burlington-Hamilton	W. Flamborough			Wentworth	4
Inglewood Drive	Concrete rigid frame	30′	Hwy. 10 Hwy. 2–Q.E.W.	Toronto	2	Range I	Peel	6
Jackson Park Overhead at E.T.R.: C.P.R.	Continuous hollow slab	6 @ 75′, 3 @ 82′, 1 @ 106′, 1 @ 63′	Hwy. 3B Jct. Hwy. 3–Windsor	Sandwich W.	81–82	XI	Essex	1
Jeanette Ck. Br. Diversion Bloomfield County Rd. 27	Concrete rigid frame	35′	County Rd. 27	Raleigh	18–19	A	Kent	1
Jessie River Bridge	Steel beam, timber deck	23′-4″/58′/ 23′-4″	Hwy. 583 Hearst–Meade	Way	9	II	Cochrane	16
Jessops Creek Bridge (Widening)	Steel beam, simply supported	37′-6″	Hwy. 11B North Bay–Callander	W. Ferris	40	XV	Nipissing	13
Kent County Rd. 15 (Harwich Twp. Bridge 1)	Continuous steel beam	40′/69′/69′/40′	Hwy. 401 Tilbury–Hwy. 21	Harwich	15	T.L.R.	Kent	1
Kings Road Underpass (Flamborough E. Twp. F. W. 11)	Continuous boat type	49′/73′/73′ 49′	Hwy. 403 Burlington–Hamilton	(Formerly Flamborough E.) Town of Burlington	1	I	Halton	4
Lemonville C.N.R. Overhead	Prestressed concrete girder, simply supported, continuous over Piers 1, 3 and 5	1 @ 70′ 5 @ 84′-3″ 1 @ 44′	Hwy. 403 Burlington–Hamilton	(Formerly Flamborough E.) Town of Burlington	9	I	Halton	4
Little Don River Bridge	Double rigid frame box culvert	2 @ 19′-9″	Hwy. 7 Woodbridge-Unionville	Vaughan	35	I	York	6

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Little Grassy River at Bergland	Steel beam, timber deck	2 @ 19′-4″ 2 @ 19′-6″ 2 @ 20′, 1 @ 29′	Hwy. 621 Sleeman–Morson	McCrosson	....	....	Rainy River	20
Little Grassy River at Yongeberg	Steel beam, timber deck	2 @ 19′-4″ 2 @ 19′-6″ 2 @ 20′, 1 @ 29′	Hwy. 600 Rainy River–Black Hawk	McCrosson	....	....	Rainy River	20
Little Papineau River Bridge	Glue laminated timber bridge	50′-6″	Hwy. 62 Maynooth–Combermere	Wicklow	5	IV	Hastings	10
Long Sault Road Bridge (Cornwall Twp. Bridge 1)	Continuous "T" beam	40′/74′/74′/40′	Hwy. 401 at Long Sault	Cornwall	37	II–III	Stormont	9
Lunenburg County Road (Osnabruck Twp. Bridge 7)	Continuous boat type	40′/66′/66′/40′	Hwy. 401 Ingleside–Long Sault	Osnabruck	6–7	II	Stormont	9
Magnetawan River Bridge	Steel plate girder, simply supported	93′	Hwy. 518 Jct. Hwy. 11–Kearney	Perry	27–28	X	Parry Sound	11
Malcolm Bridge (Thames River)	Precast, pretensioned girder	75′	Hwy. 97 Galt–Hickson	Zorra East	20–21	XVI	Oxford	3
Marysville Creek (Tyendinaga Twp. Bridge 8)	Concrete barrel arch	33′-1″	Hwy. 401 Belleville–Napanee	Tyendinaga	28	I N	Hastings	8
Merlin Road (Raleigh Twp. Bridge 15)	Continuous steel plate girder	38′/64′/64′/38′	Hwy. 401 Tilbury–Hwy. 21	Raleigh	1	V	Kent	1
Middlesex County Rd. 15A (Delaware Twp. Bridge 2)	Steel plate girder, simply supported	51′/85′/85′/51′	Hwy. 401 Tempo–Elgin/Kent Co. Line	Delaware	24	IV	Middlesex	2
Mongowin Twp. C.P.R. Overhead	Concrete rigid frame	25′-2″	Hwy. 68 Hwy. 17–S. Baymouth	Mongowin	....	Block A	Sudbury	17
Moose Creek Bridge	Continuous steel beam	72′	Hwy. 65 New Liskeard–Quebec Bdy.	Casey	8	II–III	Timiskaming	14
Mud Creek Bridge	Concrete rigid frame	38′	Hwy. 81 Hwy. 27–Hwy. 7	E. Williams	11	VII	Middlesex	2
Mull Side Road (Harwich Twp. Bridge 3)	Continuous welded steel plate girder	40′/61′/61′/40′	Hwy. 401 Tilbury–Hwy. 21	Harwich	18–19	XI	Kent	1
Neebing River Bridge	Concrete rigid frame box culvert	21′-8″	Hwy. 17 and 11 Ft. William City Limit W.	Neebing	15	III–IV	Thunder Bay	19
Niagara Twp.–Q.E.W. Interchange	Prestressed concrete box girder	109′-8¾″ 157′-11½″ 109′-8¾″	Q.E.W. and Hwy. 405 Q.E.W.–Queenston	Niagara	183	....	Lincoln	4
Nottawasaga River Bailey Bridge	Single–single Bailey	10 @ 40′	Hwy. 92 at Wasaga Beach	Sunnidale	10	XVI	Simcoe	5

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Otter Creek Bridge North	Concrete rigid frame	55′	Hwy. 9 Millmay–Walkerton	Carrick	10–11	XIV	Bruce	3
Otter Creek Bridge South	Concrete rigid frame	35′	Hwy. 9 Millmay–Walkerton	Carrick	10–11	XIII	Bruce	3
Oxtongue Lake Bridge	Continuous steel beam	10 @ 31′ 1 @ 52′	Hwy. 60 Jct. Hwy. 35 and 60–Algonquin Park	McClintock	6	XIII	Haliburton	11
Palace Road Overpass (Fredericksburg North Twp. Bridge 2)	Continuous steel plate girder (dual)	54′-1 1/2″	Hwy. 401 Napanee–Odessa	Fredericksburg North	25	VII	Lennox and Addington	8
Parkes Creek Bridge Widening	Concrete rigid frame	19′-10 1/2″	Hwy. 11B North Bay–Callander	West Ferris	40	XVI	Nipissing	13
Pearsall Creek Culvert (Widening)	Double rigid frame box culvert	20′/20′	Hwy. 14 Crofton–Bloomfield	Hallowell	62	II	Prince Edward	7
Percy St. Bridge 19	Concrete rigid frame	60′	Ottawa Queensway	.....			Carleton	9
Pickerel River Bridge	Triple timber culvert	7′/7′/7′/	Hwy. 105 Hwy. 17–Ear Falls	Unsurveyed Territory			Kenora	20
Pigeon River Bridge	Concrete rigid frame	30′	Hwy. 61 Ft. William–Moose Hill	Stuart Loc.			Thunder Bay	19
Plunketts Creek Bridge	Concrete rigid frame	50′	Hwy. 7 at Woodbridge	Vaughan	5–6	VIII	York	6
Post Road Bridge (Cornwall Twp. Bridge 5)	Continuous "T" beam	2 @ 62′-1″, 2 @ 72′-7 3/8″	Hwy. 401 Long Sault–Lancaster	Cornwall	21–22	V	Stormont	9
Preston St. Bridge 15	Concrete rigid frame (dual)	60′-6 1/2″	Ottawa Queensway	.....			Carleton	9
Rainy Lake Causeway High Level Bridge	Prestressed concrete girder	2 @ 81′, 16 @ 97′ 2 @ 150′	Hwy. 11 at Fort Frances	.....			Rainy River	20
Raleigh Plains Drain Bridge Farm Access Road (Longmore Property)	Continuous steel beam	19′-3″/30′/19′-3″	North of Hwy. 401	Raleigh	14	VII	Kent	1
Raleigh Plains Drain Bridge Farm Access Road (Longmore Property)	Continuous steel beam	19′-3″/30′/19′-3″	North of Hwy. 401	Raleigh	14–15	VII	Kent	1
Raleigh Plains Drain Bridge Farm Access Road (Schroeder Property)	Continuous steel beam	19′-3″/30′/19′-3″	North of Hwy. 401	Raleigh	15	VII	Kent	1
Rochester St. Bridge 16	Concrete rigid frame (dual)	60′-7″	Ottawa Queensway				Carleton	9

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Sauble River Bridge	Continuous steel plate girder	105′	Hwy. 21 Owen Sound–Southampton	Amabel	14	A	Bruce	5
Scarborough Twp. C.P.R. Overhead	Concrete rigid frame prestressed centre span	35′-3″/97′-2″ 35′-3″	Hwy. 48 Jct. Hwy. 401–Markham	Scarborough	17–18	IV	York	6
Selby Creek Bridge	Concrete rigid frame	41′-5″	Hwy. 41 Picton–Pembroke	Richmond	21	IV	Lennox and Addington	8
Shawmear River Bridge	Glue laminated timber	70′	Hwy. 101 Chapleau–Folleyet	Sandy	....	....	Sudbury	14
Sidney St. Underpass (Thurlow Twp. Bridge 1)	Prestressed concrete girder	2 @ 35′ 2 @ 61′-9″	Hwy. 401 Trenton–Belleville	Thurlow	1	II	Hastings	8
Snake Road Overpass (Flamborough E. Twp. F. W. 16)	Continuous concrete slab (haunched) (dual)	38′-6″/50′-6″ 38′-6″	Hwy. 403 Burlington–Hamilton	(Formerly Flamborough E.) Town of Burlington	11–12	I	Halton	4
Spanish River Bridge at Massey	Continuous steel plate girder	178′/234′ 178′	Municipal Rd.	Salter	....	Sec. 25	Sudbury	17
St. Andrews Road (Cornwall Twp. Bridge 14)	Continuous steel beam (dual)	2 @ 34′-4 5/8″ 1 @ 69′-10 1/4″	Hwy. 401 Long Sault–Lancaster	Cornwall	9–10	III	Stormont	9
St. David's Road Bridge	Prestressed girder	36′/67′-6″ 60′/36′	Q.E.W. Homer Skyway–Ft. Erie	Grantham	....	....	Lincoln	4
St. David's Road Bridge	Prestressed girder	44′/67′-6″ 43′-11 1/2″	Hwy. 8 St. Catharines-St. David's	Grantham	....	....	Lincoln	4
St. David's Bridge Hwy. 8 Overpass	Steel girder, simply supported	48′/82′/48′	Hwy. 405 Q.E.W.–Queenston	City of Niagara Falls	4	....	Welland	4
South Raisin River Bridge (Cornwall Twp. Bridge 13)	Twin box culvert	2 @ 20′	Hwy. 401 Long Sault Lancaster	Cornwall	7–8	III	Stormont	9
Stanley Ave., C.N.R. Subway	Steel through girder	70′-1″/85′-5″	Hwy. 405 Q.E.W. Queenston	City of Niagara Falls	2–3	....	Welland	4
Stanley Ave. Underpass	Continuous steel beam	70′-4″/85′-8″	Hwy. 405 Q.E.W.–Queenston	City of Niagara Falls	2–3	....	Welland	4
Stormont County Rd. 15 (Cornwall Twp. Bridge 2)	Continuous steel beam	40′/66′/66′/40′	Hwy. 401 Long Sault–Lancaster	Cornwall	30–31	V	Stormont	9
Sturgeon River at Superior Jct.	Continuous steel plate girder	90′/120′/90′	Access Rd. 7 mi. east of Sioux Lookout	Unsurveyed Territory	....	....	Kenora	20

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Switzerville Road Underpass (Ernestown Twp. Bridge 2)	Continuous boat type	2 @ 40′ 2 @ 73′-6″	Hwy. 401 Napanee–Odessa	Ernestown	3	VI	Lennox and Addington	8
Thunder Creek Bridge	Continuous steel beam	2 @ 35′-6″ 3 @ 35′	Hwy. 17 10 mi. east of Dryden	Zealand	10	IV	Kenora	20
Township Road Overpass (Gwillimbury W. Twp. Bridge)	Concrete rigid frame (dual)	35′-0¾″	Hwy. 400 Hwy. 88–Hwy. 27	Gwillimbury West	7	XII XIII	Simcoe	6
Veuve River Bridge	Steel beam, simply supported	1 @ 72′-4″ 2 @ 71′-9½″	Hwy. 64 Verner–Lavigne	Caldwell	8–9	IV	Nipissing	13
Wallbridge Road Underpass (Sidney Twp. Bridge 11)	Continuous prestressed girder	40′/69′-9″ 69′-9″/40′	Hwy. 401 Trenton–Belleville	Sidney	30–31	II	Hastings	8
Waterdown Road Underpass (Flamborough E. Twp. F. W. 12)	Continuous concrete "T" beam	43′/74′/74′/43′	Hwy. 403 Burlington–Hamilton	(Formerly Flamborough E.) Town of Burlington	6–7	I	Halton	4
Washington Creek Bridge	Concrete rigid frame	35′	Hwy. 97 Galt–Hickson	Blenheim	13	XII–XIII	Oxford	3
Waverly Road Bridge (Darlington Twp. Bridge 12)	Prestressed girder, simply supported	2 @ 40′ 2 @ 72′-3″	Hwy. 401 Oshawa–Port Hope	Darlington	13–14	B.F.	Durham	7
Westley Creek Bridge	Concrete rigid frame	28′	Hwy. 401 Service Rd. Lancaster–Quebec Bdy.	Lancaster	24–25	I	Glengarry	9
Whitefish River Bridge	Concrete rigid frame	50′	Hwy. 68 Hwy. 17–South Baymouth	Curtin			Sudbury	17
Windy Point Bridge	Continuous steel plate girder	142′/188′/142′	Hwy. 11 13 mi. east of Ft. Frances	Watten	23	II S.W.	Rainy River	20
Wymans Side Road Bridge (Tyendinaga Twp. Bridge 6)	Prestressed concrete girder	2 @ 40′ 2 @ 65′9″	Hwy. 401 Belleville–Napanee	Tyendinaga	22–23	I N	Hastings	8

APPENDIX No. 5

COUNTIES

Chronological Summary of Road Expenditure and Provincial Subsidy

Year	Number of Counties	Approved Expenditure	Government Subsidy
1903	4	$ 166,149.06	$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2 387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
1961	37	31,210,823.16	17,179,416.16
1962	37	35,033,598.28	19,025,879.89
Totals to Date.....		$515,109,722.70	$268,018,916.78

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1962
Provincial Subsidies on 1962 Expenditures Being Paid in the 1962-63 Fiscal Year

County	Year of Establishment of System	Road Mileages			Total Approved Expenditures to End of 1962	Total Government Grant
		County Roads	County Suburban Roads	Total		
Brant	1917	64.7	62.1	126.8	$ 8,385,818.10	$ 4,497,761.68
Bruce	1917	312.7	.....	312.7	12,507,992.38	6,710,573.91
Carleton	1910	170.0	108.7	278.7	23,527,317.01	12,298,725.50
Dufferin	1918	179.3	.....	179.3	5,741,465.56	2,918,789.99
Elgin	1917	245.7	25.0	270.7	12,228,159.67	6,430,617.36
Essex	1916	222.2	53.0	275.2	21,032,503.38	10,927,914.09
Frontenac	1907	120.1	41.9	162.0	6,048,711.18	3,097,979.22
Grey	1918	330.6	34.7	365.3	13,582,303.72	7,024,865.63
Haldimand	1912	157.5	.....	157.5	10,972,900.84	5,573,275.01
Halton	1907	149.7	.....	149.7	9,279,293.40	4,719,162.92
Hastings	1904	235.6	16.2	251.8	9,198,874.83	4,581,162.21
Huron	1917	384.9	.....	384.9	13,990,006.45	7,560,428.76
Kent	1917	378.7	27.1	405.8	21,207,709.45	11,650,976.09
Lambton	1918	245.4	25.4	270.8	15,709,209.05	8,467,673.87
Lanark	1903	234.0	.....	234.0	7,935,007.34	4,063,820.49
Leeds and Grenville	1910	297.4	35.5	332.9	11,241,379.61	5,632,266.05
Lennox and Addington	1906	175.3	.....	175.3	6,930,682.58	3,584,527.88
Lincoln	1904	117.6	46.8	164.4	12,893,720.81	6,457,272.81
Middlesex	1906	382.4	65.5	447.9	24,826,387.82	13,257,249.62
Norfolk	1917	210.1	.....	210.1	13,830,940.73	7,107,205.02
Northumberland and Durham	1918	289.0	12.7	301.7	12,805,872.66	6,629,934.88
Ontario	1918	218.1	21.7	239.8	12,070,191.24	6,344,450.72
Oxford	1904	204.5	15.5	220.0	13,606,381.51	7,043,909.24
Peel	1907	176.8	.....	176.8	18,917,711.10	10,095,717.12
Perth	1907	174.4	25.1	199.5	8,947,426.49	4,631,915.24
Peterborough	1919	128.6	50.0	178.6	7,116,946.03	3,835,910.14
Prescott and Russell	1917	323.2	.....	323.2	13,795,742.37	7,006,059.59
Prince Edward	1907	184.4		184.4	6,893,262.19	3,454,831.85
Renfrew	1918	204.9	.....	204.9	11,310,803.44	5,912,790.06
Simcoe	1903	256.2	18.2	274.4	14,667,132.82	7,399,274.38
Stormont, Dundas and Glengarry	1917	381.1	61.0	442.1	15,745,081.33	8,006,213.66
Victoria	1917	233.6	.....	233.6	8,404,245.74	4,409,837.13
Waterloo	1908	96.1	117.0	213.1	15,926,116.18	8,423,884.85
Welland	1912	128.5	33.6	162.1	17,672,594.79	9,077,872.79
Wellington	1903	344.0	36.0	380.0	17,358,864.09	9,133,296.88
Wentworth	1903	43.6	126.1	169.7	15,828,547.98	7,946,628.48
York	1911	.....	186.9	186.9	42,972,418.83	22,104,141.66
Totals		8,000.9	1,245.7	9,246.6	$515,109,722.70	$268,018,916.78

APPENDIX

SUMMARY OF COUNTY

(Government Subsidies Paid

Name of County	Roads		Bridges and Culverts	
	Construction	Maintenance	Construction	Maintenance
Brant	$ 309,297.53	$ 135,430.16	$ 106,036.43	$ 3,843.91
Bruce	364,483.58	141,162.13	275,800.57	7,537.87
Carleton	481,650.51	126,956.10	121,956.84	6,591.92
Carleton (Ottawa Sub.)	627,041.62	111,886.80	111,926.50	6,219.45
Dufferin	243,982.52	117,115.43	51,075.45	484.15
Elgin	544,177.02	199,047.79	124,160.11	14,039.93
Essex	1,494,274.29	322,969.11	44,347.54	11,037.48
Frontenac	260,515.85	148,012.45	26,615.07	276.48
Grey	448,649.17	257,583.83	135,393.23	7,651.18
Haldimand	489,391.21	106,413.54	46,470.79	823.17
Halton	304,831.56	293,623.71	56,099.60	3,403.59
Hastings	162,463.58	203,398.29	33,165.47	8,215.42
Huron	426,374.87	312,997.19	188,075.37	8,643.90
Kent	614,364.23	206,053.09	218,824.31	14,810.14
Lambton	1,306,148.12	229,663.93	740,346.03	1,387.95
Lanark	200,694.91	118,987.20	31,343.89	290.52
Leeds and Grenville	315,732.29	241,383.03	46,305.99	12,284.28
Lennox and Addington	121,725.59	131,931.55	37,059.25	1,319.64
Lincoln	421,308.84	192,924.42	54,089.76	3,264.66
Middlesex	739,706.99	410,936.13	294,456.87	29,636.78
Norfolk	607,666.15	245,288.63	90,097.79	4,596.36
Northumberland and Durham	657,596.75	182,662.35	59,523.67	1,476.30
Ontario	743,102.36	224,899.22	157,010.89	12,339.77
Oxford	354,054.26	287,713.18	244,833.66	4,728.32
Peel	1,207,086.36	333,838,25	341,108.72	12,836.70
Perth	309,125.46	148,835.30	57,573.46	1,959.97
Peterborough	264,541.70	112,686.05	104,205.10	6,564.77
Prescott and Russell	437,115.44	219,547.41	70,941.46	7,054.95
Prince Edward	192,016.96	151,735.30	19,462.97	64.95
Renfrew	271,797.32	157,271.86	16,524.06	6,291.82
Simcoe	547,779.61	278,752.00	67,145.33	32,095.56
Stormont, Dundas and Glengarry	250,130.93	204,971.25	150,090.29	10,459.80
Victoria	220,071.22	229,817.04	99,074.18	3,921.21
Waterloo	777,235.52	195,285.36	81,147.63	5,617.95
Welland	733,327.76	336,321.36	110,516.45	17,251.60
Wellington	170,509.85	410,977.00	110,197.92	5,331.42
Wentworth	117,025.37	358,040.29	5,356.85	11,935.76
York	1,160,726.62	291,095.94	210,899.86	4,720.00
Totals	$18,897,723.92	$ 8,378,213.67	$ 4,739,259.36	$ 291,009.63

SUMMARY OF METROPOLITAN

Metropolitan Toronto	$22,877,664.59	$ 2,111,467.38	$ 3,586,188.45	$ 112,163.88

No. 7

ROAD EXPENDITURES—1962

in 1962-1963 Fiscal Year)

Winter Control (Maintenance)	Approved Expenditure			Government Subsidy 50% and 80%
	Construction	Maintenance	Total	
$ 28,205.61	$ 415,333.96	$ 167,479.68	$ 582,813.64	$ 324,370.92
98,000.00	640,284.15	246,700.00	886,984.15	528,493.61
20,666.87	603,607.35	154,214.89	757,822.24	417,475.75
88,992.39	738,968.12	207,098.64	946,066.76	508,477.17
58,000.00	295,057.97	171,599.58	466,657.55	248,796.66
38,918.41	668,337.13	252,006.13	920,343.26	501,631.64
52,591.31	1,538,621.83	386,597.90	1,925,219.73	979,225.38
35,371.76	287,130.92	183,660.69	470,791.61	243,463.27
144,000.00	584,042.40	409,235.01	993,277.41	539,552.03
14,516.08	535,862.00	121,752.79	657,614.79	342,995.59
60,755.12	360,931.16	357,782.42	718,713.58	377,207.75
63,414.88	195,629.05	275,028.59	470,657.64	247,743.09
120,466.89	614,450.24	442,107.98	1,056,558.22	587,294.89
9,505.88	833,188.54	230,369.11	1,063,557.65	601,869.16
41,066.46	2,046,494.15	272,118.34	2,318,612.49	1,381,826.44
51,811.50	232,038.80	171,089.22	403,128.02	211,054.33
61,332.69	362,038.28	315,000.00	677,038.28	356,096.22
33,310.28	158,784.84	166,561.47	325,346.31	174,186.83
54,195.45	475,398.60	250,384.53	725,783.13	380,097.90
72,203.82	1,034,163.86	512,776.73	1,546,940.59	870,698.40
71,066.81	697,763.94	320,951.80	1,018,715.74	537,766.12
69,072.38	717,120.42	253,211.03	970,331.45	503,465.71
91,303.20	900,113.25	328,542.19	1,228,655.44	665,132.91
59,765.99	598,887.92	352,207.49	951,095.41	550,416.30
79,473.80	1,548,195.08	426,148.75	1,974,343.83	1,093,355.54
31,173.63	366,698.92	181,968.90	548,667.82	292,193.94
43,044.76	368,746.80	162,295.58	531,044.38	298,752.15
75,296.60	508,056.90	301,898.96	809,955.86	428,376.85
35,980.13	211,479.93	187,780.38	399,260.31	205,488.53
42,244.43	288,321.38	205,808.11	494,129.49	253,909.51
96,631.98	614,924.94	407,479.54	1,022,404.48	540,974.51
102,135.59	400,221.22	317,566.64	717,787.86	407,058.96
61,185.67	319,145.40	294,923.92	614,069.32	337,933.28
80,820.50	858,383.15	281,723.81	1,140,106.96	596,083.15
96,427.04	843,844.21	450,000.00	1,293,844.21	685,252.53
153,622.76	280,707.77	569,931.18	850,638.95	459,978.27
153,545.25	122,382.22	523,521.30	645,903.52	328,139.54
241,275.78	1,371,626.48	537,091.72	1,908,718.20	1,019,045.06
$2,727,391.70	$23,636,983.28	$11,396,615.00	$35,033,598.28	$19,025,879.89

ROAD EXPENDITURES—1962

$1,749,825.57	$26,463,853.04	$ 3,973,456.83	$30,437,309.87	$15,218,654.94

APPENDIX No. 8

INCORPORATED TOWNSHIPS

Chronological Summary of Road Expenditure and Provincial Subsidy Including Improvement Districts and Indian Reserves

Year	No. of Townships	Approved Expenditure	Subsidy
1920 to 1934	172–352	$ 58,408,281.44	$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
1961	632	44,505,542.38	24,919,087.33
1962	633	46,022,546.96	26,082,619.19
	Totals.....	$565,467,684.56	$301,359,428.05

Note: — 575 Townships, 18 Improvement Districts and 40 Indian Reserves are represented in the above expenditures for 1962.

APPENDIX No. 9

CITIES, TOWNS AND VILLAGES

Chronological Summary of Road Expenditures and Provincial Subsidy

Year	No. of Urban Municipalities	Approved Expenditure	Subsidy
1947	324	$ 5,334,316.72	$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
1961	341	37,130,872.81	14,862,154.63
1962	345	40,193,137.14	15,903,508.14
	Totals.....	$352,705,718.52	$138,767,979.25

Note: — 31 Cities, 7 Separated Towns, 149 Towns and 158 Villages are represented in the above expenditure for 1962.

APPENDIX No. 10

MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1962
ROADS UNDER LOCAL AUTHORITY

Counties	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bitumi-nous	Asphalt Con-crete	Cement Con-crete	Other	Total
Brant	7.8	1.0	8.0	113.1	37.5	22.9	.....	190.3
Bruce	9.7	11.3	60.2	64.3	22.8	.....	0.8	169.1
Carleton	3.7	20.5	78.0	156.4	220.4	2.0	.....	481.0
Dufferin	0.9	0.2	16.6	5.0	7.5	1.7	.....	31.9
Elgin	7.8	0.4	32.1	32.4	32.5	1.1	1.4	107.7
Essex	2.8	21.0	73.3	47.9	92.3	266.6	2.7	506.6
Frontenac	0.3	.....	1.0	16.4	74.8	0.2	.....	92.7
Grey	3.5	30.3	40.7	72.1	17.7	4.2	.....	168.5
Haldimand	2.5	4.9	20.1	23.6	10.4	1.2	.....	62.7
Halton	4.6	13.1	188.2	207.8	114.2	4.7	.....	532.6
Hastings	0.5	0.3	33.3	61.6	33.8	0.2	.....	129.7
Huron	1.3	0.2	45.0	39.4	21.8	0.7	.....	108.4
Kent	7.7	1.0	45.8	10.8	121.0	9.3	.....	195.6
Lambton	.....	4.5	51.8	111.9	71.2	5.2	.....	244.6
Lanark	26.3	0.3	30.7	27.3	24.7	0.8	.....	110.1
Lennox-Addington	0.2	.....	7.2	10.2	5.2	.....	.....	22.8
Leeds-Grenville	2.0	0.9	16.1	33.5	61.6	4.5	.....	118.6
Lincoln	3.4	7.1	28.7	200.9	78.7	54.2	.....	373.0
Middlesex	10.2	1.3	99.9	227.3	155.4	1.7	.....	495.8
Norfolk	3.9	.....	5.6	45.4	10.8	1.1	.....	66.8
Northumberland and Durham	3.8	0.7	64.0	74.9	62.4	3.1	.....	208.9
Ontario	13.6	.....	101.1	74.2	120.5	2.3	.....	311.7
Oxford	4.2	4.2	24.8	87.5	11.7	4.1	0.4	136.9
Peel	.....	1.4	22.2	30.4	42.4	0.7	.....	97.1
Perth	11.6	7.4	56.8	42.6	36.3	0.7	.....	155.4
Peterborough	5.2	.....	20.6	68.1	41.2	4.3	.....	139.4
Prescott-Russell	6.9	2.2	8.5	16.3	9.9	.....	.....	43.8
Prince Edward	.....	0.1	1.9	5.8	12.5	0.5	.....	20.8
Renfrew	2.7	0.9	61.3	18.8	69.0	1.0	.....	153.7
Simcoe	6.6	16.7	88.6	112.4	75.7	7.2	.....	307.2
Stormont, Dundas and Glengarry	3.1	.....	39.5	57.7	22.8	42.7	.....	165.8
Victoria	15.6	.....	44.9	1.6	24.7	.....	.....	86.8
Waterloo	17.6	8.6	43.0	187.4	161.2	7.5	19.2	444.5
Welland	8.9	0.9	38.5	147.1	94.4	14.6	0.1	304.5
Wellington	11.4	1.7	49.2	101.3	41.8	13.5	.....	218.9
Wentworth	3.2	1.7	73.8	157.2	281.0	3.1	.....	520.0
York	0.3	2.2	20.1	41.6	48.6	.....	.....	112.8
Totals—Counties	213.8	167.0	1,641.1	2,732.2	2,370.4	487.6	24.6	7,636.7
Metro. Tor. Area	0.1	.....	10.6	4.0	565.6	7.5	15.0	602.8
Districts								
Algoma	27.4	1.3	70.9	2.8	65.6	3.0	0.1	171.1
Cochrane	25.5	0.7	35.9	40.5	31.2	.....	.....	133.8
Kenora	.....	.....	49.2	2.7	22.9	.....	.....	74.8
Manitoulin	.....	10.5	1.5	.....	.....	.....	.....	12.0
Muskoka	18.1	0.4	45.1	25.8	11.6	.....	.....	101.0
Nipissing	24.1	8.7	54.4	11.9	35.8	.....	.....	134.9
Parry Sound	29.6	0.6	36.1	3.2	19.8	.....	.....	89.3
Rainy River	.....	0.5	35.5	6.6	7.1	0.5	.....	50.2
Sudbury	0.2	8.0	133.3	33.6	91.3	0.1	.....	266.5
Temiskaming	.....	.....	28.7	1.9	14.1	.....	.....	44.7
Thunder Bay (19)	.....	.....	99.7	45.4	101.4	1.9	.....	248.4
Totals—Districts	124.9	30.7	590.3	174.4	400.8	5.5	0.1	1,326.7
Grand Totals	338.8	197.7	2,242.0	2,910.6	3,336.8	500.6	39.7	9,566.2

APPENDIX

MILEAGE OF ROAD SURFACES

	COUNTY ROADS						
	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bituminous Surface	Asphalt Concrete	Cement Concrete	Other
Brant	.....	.....	19.7	106.4	.4	.3	.....
Bruce	.....	.....	123.3	130.9	57.9	.6	.....
Carleton	.....	.....	23.8	254.9	.....	.....	.....
Dufferin	.....	.....	143.8	2.9	32.6	.....	.....
Elgin	0.3	.....	95.3	162.0	13.1	.....	.....
Essex	.....	.....	81.1	84.7	97.3	11.4	0.7
Frontenac	.....	.....	65.0	96.6	0.4	.....	.....
Grey	.....	.....	290.8	60.0	14.5	.....	.....
Haldimand	.....	.....	28.9	128.6	.....	.....	.....
Halton	.....	.....	41.5	66.1	42.1	.....	.....
Hastings	.....	.....	164.9	71.2	13.6	2.1	.....
Huron	.....	.....	217.2	127.6	40.1	.....	.....
Kent	0.3	0.3	51.2	20.6	325.9	7.5	.....
Lambton	.....	.....	92.3	48.7	125.9	0.1	3.8
Lanark	.....	.....	132.1	101.5	0.4	.....	.....
Lennox and Addington	.....	.....	24.4	144.6	6.3	.....	.....
Leeds and Grenville	.....	.....	146.5	184.4	0.8	1.2	.....
Lincoln	0.9	.....	14.0	139.0	10.5	.....	.....
Middlesex	.....	.....	153.8	131.0	149.0	14.1	.....
Norfolk	.....	.....	3.8	204.7	0.9	0.7	.....
Northumberland-Durham	.....	.....	91.1	160.4	50.2	.....	.....
Ontario	.....	.....	78.8	108.2	52.8	.....	.....
Oxford	.....	.....	69.5	103.2	34.9	12.4	.....
Peel	.....	.....	48.8	28.8	95.7	3.5	.....
Perth	.....	.....	68.0	89.9	41.6	.....	.....
Peterborough	.....	.....	99.5	50.8	28.3	.....	.....
Prescott and Russell	.....	.....	175.5	142.2	5.5	.....	.....
Prince Edward	.....	.....	46.4	117.3	20.7	.....	.....
Renfrew	.....	.....	54.9	7.2	142.8	.....	.....
Simcoe	.....	.....	158.1	25.0	91.3	.....	.....
Stormont-Dundas-Glengarry	.....	.....	164.4	265.0	12.1	0.6	.....
Victoria	.....	.....	118.5	95.9	19.2	.....	.....
Waterloo	.....	.....	29.9	138.0	34.8	10.4	.....
Welland	2.5	.....	7.0	106.7	45.9	.....	.....
Wellington	.....	.....	165.1	108.0	104.4	2.5	.....
Wentworth	.....	.....	2.5	167.2	.....	.....	.....
York	.....	.....	10.2	30.5	146.2	.....	.....
Totals — Counties	4.0	0.3	3,301.6	4,010.7	1,858.1	67.4	4.5
						METROPOLITAN	
Metro. Toronto Area	4.0	.....	1.8	6.3	334.1	1.8	.....
Districts							
Algoma	.....	.....	.....	.....	.....	.....	.....
Cochrane	.....	.....	.....	.....	.....	.....	.....
Haliburton	.....	.....	.....	.....	.....	.....	.....
Kenora	.....	.....	.....	.....	.....	.....	.....
Manitoulin	.....	.....	.....	.....	.....	.....	.....
Muskoka	.....	.....	.....	.....	.....	.....	.....
Nipissing	.....	.....	.....	.....	.....	.....	.....
Parry Sound	.....	.....	.....	.....	.....	.....	.....
Rainy River	.....	.....	.....	.....	.....	.....	.....
Sudbury	.....	.....	.....	.....	.....	.....	.....
Temiskaming	.....	.....	.....	.....	.....	.....	.....
Thunder Bay	.....	.....	.....	.....	.....	.....	.....
Totals — Districts	.....	.....	.....	.....	.....	.....	.....
Unorganized Townships	.....	.....	.....	.....	.....	.....	.....
Grand Totals	8.0	0.3	3,303.4	4,017.0	2,192.2	69.2	4.5

No. 11

AT THE END OF 1962

	INCORPORATED—TOWNSHIP ROADS							
TOTAL	LEGALLY OPEN	EARTH GRADED AND DRAINED	GRAVEL OR STONE	LIGHT BITUMINOUS SURFACE	ASPHALT CONCRETE	CEMENT CONCRETE	OTHER	TOTAL
126.8	12.3	13.2	470.5	43.8	.....	.....	.....	539.8
312.7	113.0	79.3	1,672.7	29.1	16.8	.....	7.0	1,917.9
278.7	44.5	63.6	839.9	45.1	.....	.....	.....	993.1
179.3	39.2	28.0	688.0	.....	.....	.....	.....	755.2
270.7	30.1	40.1	800.9	6.4	3.4	.....	.....	880.9
275.2	1.3	21.7	818.3	101.6	52.1	38.6	.....	1,033.6
162.0	119.7	129.3	868.6	28.0	6.4	.....	.....	1,152.0
365.3	107.9	92.6	1,986.0	7.2	5.3	.5	3.2	2,202.7
157.5	21.8	52.5	472.0	64.8	7.5	.....	.....	618.6
149.7	2.4	1.5	211.1	.....	1.5	.....	.....	216.5
251.8	153.2	305.7	1,179.2	13.6	1.8	.....	.....	1,653.5
384.9	24.3	16.9	1,448.5	10.7	16.4	.....	.....	1,516.8
405.8	2.0	20.3	1,177.9	2.2	16.8	0.5	1.0	1,220.7
270.8	7.2	129.9	1,244.3	62.5	1.5	.....	3.2	1,448.6
234.0	42.5	93.7	799.7	21.6	6.9	.....	.....	964.4
175.3	112.9	103.7	527.9	21.8	1.4	.....	.....	767.7
332.9	224.1	116.5	972.7	72.6	11.2	0.9	.....	1,398.0
164.4	79.6	79.3	423.6	71.3	0.4	0.9	.....	655.1
447.9	43.6	18.8	1,512.9	6.0	10.0	0.1	.....	1,591.4
210.1	30.4	108.2	586.1	180.2	13.9	.....	.....	918.8
301.7	218.5	173.8	1,696.6	115.6	5.4	.....	.....	2,209.9
239.8	81.2	12.6	987.1	37.2	55.5	.....	.....	1,173.6
220.0	9.8	3.6	996.4	15.0	26.5	.....	.....	1,051.3
176.8	12.1	28.8	525.7	115.9	79.7	.....	.....	762.2
199.5	15.3	4.7	1,010.6	1.8	1.2	.....	.....	1,033.6
178.6	54.7	77.8	806.5	8.3	8.8	.....	.....	956.1
323.2	55.6	237.3	666.9	5.2	.....	.....	.....	965.0
184.4	5.5	1.8	386.8	4.9	3.4	1.2	.....	403.6
204.9	79.3	323.1	1,260.8	0.9	17.2	.....	.....	1,681.3
274.4	119.5	23.2	1,975.3	100.8	57.3	.....	.....	2,276.1
442.1	39.2	110.3	1,095.9	25.5	14.7	.....	.....	1,285.6
233.6	38.3	30.8	846.0	13.6	0.5	.....	.....	929.2
213.1	2.1	2.5	532.3	40.5	2.7	0.9	.....	581.0
162.1	186.5	140.1	452.9	263.2	27.0	1.2	.....	1,070.9
380.0	59.7	14.1	1,078.8	14.2	7.2	0.2	.....	1,174.2
169.7	40.5	22.5	437.1	51.4	.....	.....	.....	551.5
186.9	59.8	3.9	737.5	55.4	84.3	.....	.....	940.9
9,246.6	2,289.6	2,725.7	34,194.0	1,657.9	564.7	45.0	14.4	41,491.3
ROADS								
348.0	105.6	49.2	144.6	462.6	872.3	6.2	.....	1,640.5
.....	85.3	40.4	717.5	7.8	99.6	3.0	0.1	953.7
.....	141.6	32.5	529.3	16.6	4.0	.....	.....	724.0
.....	24.8	19.4	395.4	49.5	.....	.....	.....	489.1
.....	1.9	1.5	173.0	.....	.....	.....	.....	176.4
.....	22.3	51.6	426.6	.....	.....	.....	.....	500.5
.....	93.4	99.2	614.9	113.3	0.6	.....	.....	921.4
.....	84.4	67.5	453.7	11.4	16.5	.....	.....	633.5
.....	196.0	47.7	853.4	36.2	8.1	.....	.....	1,141.4
.....	35.4	43.2	513.1	1.1	.....	.....	.....	592.8
.....	44.6	108.8	655.5	9.3	17.2	0.2	.....	835.6
.....	94.4	1.0	525.7	8.4	28.6	.....	.....	658.1
.....	56.3	29.5	591.5	73.2	33.4	.....	.....	783.9
.....	880.4	542.3	6,449.6	326.8	208.0	3.2	0.1	8,410.4
.....	422.8	620.7	3,642.1	6.4	1.1	.....	.....	4,693.1
9,594.6	3,698.4	3,937.9	44,430.3	2,453.7	1,646.1	54.4	14.5	56,235.3

APPENDIX No. 12

SUMMARY OF EXPENDITURES ON URBAN STREETS—1962

Approved 1962 Expenditures by Cities, Towns and Villages under Part X of the Highway Improvement Act

Municipal Road District No.	Approved Expenditures — 1962				Government Subsidy 33⅓%, 50% and 80%
	Cities (31) Sep. Towns (7)	Towns (149)	Villages (158)	Urban Total (345)	
1	$ 1,832,156.15	$ 530,373.77	$ 108,742.98	$ 2,471,272.90	$ 934,241.49
2	3,190,872.54	390,607.68	102,925.11	3,684,405.33	1,429,984.01
3	2,245,916.91	513,620.73	111,193.50	2,870,731.14	1,067,440.75
4	6,223,247.92	765,878.60	148,078.02	7,137,204.54	2,709,927.10
5	126,625.20	309,421.05	77,595.59	513,641.84	260,255.38
6	599,230.36	3,232,376.61	262,087.54	4,093,694.51	2,042,697.51
6 M.T.A.	4,711,162.43	509,598.90	144,468.00	5,365,229.33	1,901,323.59
7	1,835,501.42	542,931.01	121,137.11	2,499,569.54	971,176.51
8	955,542.04	45,848.73	90,317.71	1,091,708.48	398,576.31
9	4,117,937.08	281,983.21	132,066.80	4,531,987.09	1,581,057.40
10	.....	370,768.24	141,212.85	511,981.09	267,260.01
11	.....	220,238.44	46,725.47	266,963.91	138,026.69
12	.....	52,911.14	39,902.55	92,813.69	45,222.50
13	203,981.13	212,514.95	5,753.68	422,249.76	192,617.68
14	.....	436,145.07	589.40	436,734.47	220,410.43
15	.....	173,602.18	.....	173,602.18	88,748.85
17	1,540,879.62	420,991.50	.....	1,961,871.12	893,391.95
18	628,632.54	63,324.66	4,748.97	696,706.17	244,929.34
19	1,025,254.76	33,036.83	.....	1,058,291.59	358,471.53
20	.....	312,478.46	.....	312,478.46	157,749.08
Totals.....	$29,236,940.10	$ 9,418,651.76	$ 1,537,545.28	$40,193,137.14	$15,903,508.14

APPENDIX No. 13

TYPES OF SURFACE ON THE KING'S HIGHWAYS

As of March 31, 1963

County or District	Concrete	High Cost Bituminous	Low Cost Bituminous	Gravel	Total
Algoma	.....	302.0	130.1	36.7	468.8
Brant	15.8	51.0	16.5	.....	83.3
Bruce	10.9	103.8	25.8	27.2	167.7
Carleton	4.9	132.5	.....	.....	137.4
Cochrane	.....	300.1	75.3	36.9	412.3
Dufferin	0.8	60.8	1.0	0.5	63.1
Elgin	13.2	102.5	.....	.....	115.7
Essex	55.3	129.8	19.4	6.8	211.3
Frontenac	5.0	121.6	47.0	4.2	177.8
Grey	4.9	122.8	.....	16.7	144.4
Haldimand	.....	66.7	8.0	.....	74.7
Haliburton	.....	53.4	68.8	7.5	129.7
Halton	17.0	85.9	.....	.....	102.9
Hastings	.....	136.7	103.5	.....	240.2
Huron	.....	204.2	.....	.....	204.2
Kenora	.....	290.5	44.5	170.3	505.3
Kent	15.9	159.7	.....	.....	175.6
Lambton	29.7	111.4	9.1	6.2	156.4
Lanark	.....	103.5	10.2	.....	113.7
Leeds and Grenville	28.8	206.9	15.8	.....	251.5
Lennox & Addington	16.9	72.9	40.0	4.8	134.6
Lincoln	1.8	58.7	18.3	.....	78.8
Manitoulin	.....	.....	23.4	30.2	53.6
Middlesex	8.4	200.5	.....	16.3	225.2
Muskoka	.....	127.1	62.1	.....	189.2
Nipissing	9.7	182.0	113.2	66.1	371.0
Norfolk	3.4	69.3	26.2	.....	98.9
Northumberland & Durham	.....	245.6	20.8	8.2	274.6
Ontario	15.1	106.7	16.0	.....	137.8
Oxford	8.3	124.7	.....	13.2	146.2
Parry Sound	.....	151.3	30.0	13.3	194.6
Peel	11.1	94.8	12.3	7.3	125.5
Perth	.....	130.0	.....	1.3	131.3
Peterborough	7.2	73.7	29.0	20.1	130.0
Prescott & Russell	.....	104.8	2.0	.....	106.8
Prince Edward	.....	45.7	17.2	.....	62.9
Rainy River	.....	74.6	50.8	10.0	135.4
Renfrew	0.8	178.0	116.5	4.1	299.4
Simcoe	5.8	294.9	7.9	5.8	314.4
Stormont, Dundas & Glengarry	16.4	159.7	11.0	.....	187.1
Sudbury	1.4	160.3	38.0	180.6	380.3
Temiskaming	.....	131.1	101.5	28.5	261.1
Thunder Bay	.....	599.7	20.9	33.7	654.3
Victoria	.....	127.5	36.0	10.7	174.2
Waterloo	10.6	66.8	2.1	9.5	89.0
Welland	25.1	86.6	2.0	.....	113.7
Wellington	10.4	123.2	11.0	3.1	147.7
Wentworth	2.1	118.3	35.5	.....	155.9
York	0.9	162.2	29.7	0.3	193.1
Totals	357.6	6,916.5	1,448.4	780.1	9,502.6

APPENDIX No. 13A

SUMMARY OF KING'S HIGHWAY MILEAGE BY HIGHWAY DISTRICTS

As of March 31, 1963

District	Concrete	High Cost Bituminous	Low Cost Bituminous	Gravel	Total
Chatham	100.9	399.2	28.2	11.4	539.7
London	57.7	493.1	26.2	17.9	594.9
Stratford	12.2	532.1	13.4	34.9	592.6
Hamilton	43.4	466.4	80.3	.....	590.1
Owen Sound	17.2	415.1	27.6	49.3	509.2
Toronto	31.7	377.4	65.1	.7	474.9
Port Hope	10.6	554.8	80.9	39.0	685.3
Kingston	43.7	496.8	89.5	9.0	639.0
Ottawa	29.1	555.3	39.0	.....	623.4
Bancroft	.....	101.9	289.9	22.8	414.6
Huntsville	.....	355.4	134.2	23.9	513.5
North Bay	9.7	292.3	98.0	60.8	460.8
New Liskeard	.....	197.0	170.3	75.2	442.5
Cochrane	.....	281.4	12.2	24.4	318.0
Sudbury	1.4	248.0	47.3	68.6	365.3
Sault Ste. Marie	.....	287.1	130.1	128.2	545.4
Fort William	.....	532.2	20.9	43.7	596.8
Kenora	.....	331.0	95.3	170.3	596.6
Totals	357.6	6,916.5	1,448.4	780.1	9,502.6

APPENDIX No. 13B

TYPES OF SURFACE ON SECONDARY HIGHWAYS

As of March 31, 1963

County or District	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
Algoma	9.4	33.0	271.5	.....	313.9
Cochrane	0.7	37.2	112.7	.....	150.6
Frontenac	.....	6.3	28.9	.....	35.2
Haliburton	2.8	55.6	42.2	.....	100.6
Hastings	2.5	11.9	16.6	.....	31.0
Kenora	8.8	8.2	121.1	.....	138.1
Lanark	.....	14.0	.....	.....	14.0
Lennox and Addington	6.2	.....	.....	.....	6.2
Manitoulin	.....	41.4	123.0	.....	164.4
Muskoka	7.7	67.7	18.9	.....	94.3
Nipissing	.....	16.8	70.5	11.8	99.1
Parry Sound	.....	108.9	103.6	.....	212.5
Peterborough	.....	19.8	37.8	.....	57.6
Rainy River	.....	9.2	218.3	.....	227.5
Renfrew	7.2	58.5	40.7	.....	106.4
Sudbury	60.7	21.4	207.1	.....	289.2
Temiskaming	2.4	29.2	181.0	.....	212.6
Thunder Bay	12.0	15.4	361.2	2.4	391.0
Victoria	5.6	17.7	43.8	.....	67.1
Totals	126.0	572.2	1,998.9	14.2	2,711.3

APPENDIX No. 13C

TYPES OF SURFACE ON SECONDARY HIGHWAYS BY HIGHWAY DISTRICTS

As of March 31, 1963

District	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
Port Hope	.....	21.0	62.9	.....	83.9
Kingston	8.7	6.3	6.8	.....	21.8
Ottawa	.....	44.5	.....	.....	44.5
Bancroft	7.2	54.4	107.6	.....	169.2
Huntsville	16.1	201.9	120.0	.....	338.0
North Bay	.....	59.3	128.3	11.8	199.4
New Liskeard	3.1	63.3	289.4	.....	355.8
Cochrane	.....	3.1	143.6	.....	146.7
Sudbury	60.7	53.4	298.3	.....	412.4
Sault Ste. Marie	14.6	32.2	197.8	.....	244.6
Fort William	6.8	24.6	343.7	2.4	377.5
Kenora	8.8	8.2	300.5	.....	317.5
Totals	126.0	572.2	1,998.9	14.2	2,711.3

APPENDIX No. 13D

TYPES OF SURFACE ON TERTIARY ROADS BY HIGHWAY DISTRICTS

As of March 31, 1963

District	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
Fort William	.....	.....	8.5	.....	8.5
Kenora	.....	.....	12.8	.....	12.8
Totals	.....	.....	21.3	.....	21.3

APPENDIX No. 13E

ROAD MILEAGES IN ONTARIO

As of March 31, 1963

	Total Miles	Type of Pavement					
		Concrete	High Cost Bituminous	Low Cost Bituminous	Gravel	Earth	Total
King's Hwys.	9,502.6	357.6	6,916.5	1,448.4	780.1	.....	9,502.6
Secondary Hwys.	2,711.3	.....	126.0	572.2	1,998.9	14.2	2,711.3
Tertiary Roads	21.3	.....	.....	.....	21.3	.....	21.3
Totals	12,235.2	357.6	7,042.5	2,020.6	2,800.3	14.2	12,235.2

APPENDIX No. 14

DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1962

(Authorized by Part XI of the Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1962–63
6R	Muskoka Falls–Vankoughnet	5.00	Oakley	Muskoka	$ 4,030.50
57R	Centreville–Enterprise	5.00	Camden East	Lennox and Addington	2,215.10
170	Perth Road	17.65	County	Frontenac	145,303.73
178	French Line Road	5.00	Darling	Lanark	10,210.38
202R	Champlain Road	4.00	Tiny	Simcoe	10,685.80
216R	Oro–Medonte Townline	7.00	Oro and Medonte	Simcoe	1,839.27
278	Houghton Bay Road	4.80	Bastard and Burgess South	Leeds and Grenville	17,383.35
287	Nepean Swamp Road	5.95	Nepean	Carleton	4,863.90
289	Mass Road–County Road No. 8 (part)	12.20	County	Frontenac	133,394.13
311R	McKnight Road	2.50	Hinchinbrooke	Frontenac	4,120.78
313	Centre Line Road	4.00	Plummer Additional	Algoma	11,306.90
323	Lanark–Elphin Road	12.00	County	Lanark	91,330.60
349	Athena–Mallorytown Road	3.00	County	Leeds and Grenville	7,935.00
361	Westport Bedford Mills Co. Rd. 11 (part)	5.30	County	Leeds and Grenville	37,775.44
364	Flower Station–Darling Boundary Road	6.80	Lavant	Lanark	3,000.00
382	Calton Griffin's Corners	4.12	Bayham	Elgin	205.42
384	Mount Forest–Shelburne	25.80	County	Grey, Dufferin, Wellington	66,499.75
409	Rosseau–Huntsville Road	9.50	Cardwell	Muskoka	10,082.96
415	Snow Road–Ompah	15.00	Palmerston and North and South Canonto	Frontenac	16,154.34
423	Grand River Road	11.11	County	Haldimand	16,414.09
424	Beechwood Road	7.00	Richmond	Lennox and Addington	24,949.58
450	Lilly's Corners–Lyndhurst	4.80	County	Leeds and Grenville	35,720.74
453	Sydenham–Otter Lake Road	6.50	Loughborough	Frontenac	89.71Cr
456	Fourth Line Road	1.00	Tarentorus	Algoma	731.01
460	Ridge Road in Rawdon	5.00	County	Hastings	17,717.91
467	Brackenrig Road	6.00	Watt	Muskoka	8,546.72
471	Alvinston Courtright	30.75	County	Lambton	747,647.05
473	Balsam Road	3.00	Hagerman	Parry Sound	15,067.73
483	Goodfish Road	6.00	Teck	Cochrane	21,410.33
491	Flesherton–Singhampton	15.80	County	Grey	157,052.68
495	Morganston–Cuff's Corners	11.00	County	Northumberland and Durham	214,082.97
498	Spanish River Bridge	.30	Salter, May, Harrow, Town of Massey	Sudbury	96,762.84
505	Katchiwand Lake Road	6.00	Smith	Peterborough	13,253.50
517	Pidgeon Lake Road	14.50	County	Victoria	42,941.95
518	Bannockburn–Cooper Road	4.50	Madoc	Hastings	14,345.62
521	15th Sideroad	9.50	Flos	Simcoe	8,568.63
524	McGarth–Clontarf	8.00	Grattan and Sebastopol	Renfrew	52,755.48
528	Sulphide–Tweed Road	5.30	County	Hastings	69,866.33
530	River Road	6.00	Salter, May, Harrow	Sudbury	29,064.05
531	Heart Lake Road	4.50	Chinguacousy	Peel	26,561.48
533	Rose Point Road	1.80	Foley	Parry Sound	12,304.46
534	Manchester–Goodwood	12.70	County	Ontario	144,241.04
535	Hay Bay Road	6.00	South Fredericksburg	Lennox and Addington	43,948.42
538	Concession VI/VII	5.50	Westmeath	Renfrew	3,885.11
539	Hastings Keene	12.50	County	Peterborough	325,888.83
541	Admaston–Bagot Townline	10.40	Admaston and Bagot	Renfrew	24,170.80
543	Concession VI/VII	1.70	Williamsburgh	Dundas	2,308.80

545	Scoharie Road	9.30	County	Prince Edward	$	166,600.32
548	Plevna–Ompah	6.70	Clarendon and Miller	Frontenac		145,653.46
550	Sideroad 15/16	5.00	Wollaston	Hastings		30,365.70
552	Loretto Road	12.50	County	Simcoe		162,150.24
554	Concession IV V	1.90	Derby	Grey		8,017.14
557	Parham Wagarville	4.40	Hinchinbrooke	Frontenac		51,338.65
559	Concession IV/V	4.50	Lochiel	Stormont, Dundas and Glengarry		20,275.27
563	Webbwood Bridge and Approaches	0.14	Hallam	Sudbury		229,487.55
569	Madoc boundary West Conc. VI	6.00	Marmora and Lake	Hastings		14,286.50
572	Warburton–Long Point	6.00	County	Leeds and Grenville		90,483.96
573	County Road No. 21	9.70	County	Stormont, Dundas and Glengarry		42,906.42
574	Twin Lakes Road	7.00	Nakina I.D.	Thunder Bay		17,304.96
575	Glen Smail Westerly	5.20	Edwardsburg	Leeds and Grenville		20,088.14
577	Smith's Falls–North Gower (part)	10.00	County	Lanark		115,572.73
578	Port Cunnington Road	4.50	Franklin	Muskoka		43,791.24
580	Gooderham–Haliburton	11.10	Dysart et al and Glamorgan	Haliburton		230,148.19
581	Townline, Hwy. No. 27–Hwy. No. 90	4.20	Essa and Innisfil	Simcoe		103,010.39
584	Sideroad 2/3 (part) Con. II/III (part)	3.00	McMurrich	Parry Sound		7,069.30
585	County Road No. 39 (part)	1.00	County	Elgin		720.72
586	Germanicus Road	4.75	Wilberforce	Renfrew		70,806.24
587	Havelock–Rush Point	4.00	Belmont and Methuen	Peterborough		65,899.04
588	County Road No. 1 (part)	10.50	County	Hastings		446,906.23
589	Concession III IV Road (part)	1.20	Rawdon	Hastings		11,093.57
590	Wilson–Vennacher Road (part)	2.80	Clarence, Miller, Griffith, etc.	Renfrew		40,216.44
591	Detlor Road (part)	2.10	Dungannon	Hastings		4,955.98
592	Highway No. 62–Locksley	5.70	Alice and Fraser	Renfrew		145,951.58
593	Wilson–Vennacher Road (part)	4.50	Denbigh, Abinger and Ashby	Frontenac		85,526.52
594	Huntsville–Rosseau Road (part)	8.00	Stisted and Stephenson	Muskoka		115,492.01
599	Concession IV/V Road	2.10	Thurlow	Hastings		39,991.41
602	Rose Corners–Cambridge Boundary	3.60	County	Prescott and Russell		14,330.21
604	Middle River Road (part)	2.50	McKellar	Parry Sound		21,905.16
605	Concession II/III Road	1.25	Joly	Parry Sound		27,628.43
606	Vermillion Bridge Westerly	3.50	Balfour	Sudbury		13,238.59
607	Victoria Road	0.70	Calvert	Cochrane		50,125.57
608	Wilno–Radcliffe Boundary	2.70	Hagerty, Richards, Sherwood, etc.	Renfrew		33,751.86
609	Hornings Mills Terra-Nova (part)	7.10	Mulmur	Dufferin		17,690.13
610	Hornings Mills Bridge	0.90	Melancthon	Dufferin		5,675.05
611	River Road Springdale	1.20	West Gwillimbury	Simcoe		3,532.81
612	Highway No. 26–Washago Beach	4.50	Sunnidale	Simcoe		161,114.35
613	Fallbrook Westerly	8.00	Bathurst	Lanark		31,852.97
615	Brightside–Hopetown Road	3.80	County	Lanark		182,284.75
616	Odessa Northly	1.80	County	Lennox and Addington		35,923.68
618	County Road No. 3	12.00	East Garafraxa	Dufferin		225,984.43
619	Concession II III Road	5.30	Chamberlain	Temiskaming		29,261.34
620	Genier Road	12.50	Glackmeyer	Cochrane		21,184.32
621	Vars–Osgoode Township Boundary	4.50	Cumberland	Prescott and Russell		19,863.35
622	Innisville Easterly Road	3.00	Drummond	Lanark		20,033.35
623	Bulger's Corner–5th Line	2.50	Bromley	Renfrew		21,315.00
624	Maplewood Avenue	5.30	Shuniah (McIntyre)	Thunder Bay		46,710.25
625	Burrett's Rapids–County Road No. 26	5.80	Marlborough	Carleton		22,041.52
626	Tamworth Easterly Road	4.00	Sheffield	Lennox and Addington		1,367.10
627	Concession I II Road	1.20	Nassagaweya	Halton		35,285.08
628	Montee–Rouleau Road	2.75	Rayside	Sudbury		52,260.16
629	Concession VI/VII Road	2.50	Bonfield	Nipissing		18,276.30
631	Cormac–Rochefort Road (part)	4.50	South Algoma	Renfrew		92,871.13
633	North Township Road No. 16A	3.50	Howe Island	Frontenac		185.27
634	Murrich–Perry East Con. VI VII	1.25	Perry	Parry Sound		15,184.83
635	County Road No. 2 (part)	0.70	County	Haldimand		41,241.11

(Authorized by Part XI of the Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1962–63
636	Malwood–County Road No. 20	1.75	March	Carleton	34,088.33
637	County Road No. 65	2.50	Erin	Wellington	24,737.18
638	Sideroad 5/6	6.00	West Gwillimbury	Simcoe	4,297.05
639	Morley/Shenston Westerly	7.00	Morley	Rainy River	23,605.51
640	County Road No. 4 (part)	2.30	County	Lennox and Addington	106,422.42
641	Strong–Machar Townline	1.50	Strong and Machar	Parry Sound	17,293.24
642	County Road No. 16 (part)	8.50	County	Leeds and Grenville	1,647.98
644	12 Mile Bay Road	8.00	Freeman	Muskoka	2,948.46
645	Domville Easterly	0.80	Augusta	Leeds and Grenville	500.00
646	Bellrock Road (County Road No. 7)	6.10	County	Frontenac	3,449.04
647	Cockshutt Road	5.60	County	Brant	18,143.35
648	Fitzroy Station Road	3.95	Fitzroy	Carleton	61,073.18
649	Musclow–Greenview Road (part)	2.80	Monteagle	Hastings	5,611.84
650P.E.	County Road No. 13 (part)	5.00	County	Prescott	4,204.70
651P.E.	Highway No. 16–County Road No. 18	4.50	Oxford-on-Rideau	Leeds and Grenville	4,623.11
652	25th Sideroad (Townline)	1.10	Paipoonge and Neebing	Thunder Bay	29,240.13
653	Barrie Island Bridge Westerly	1.10	Barrie Island	Manitoulin	6,175.45
654	Second Line Road	6.65	Sherbrooke South	Lanark	4,445.55
655	Crow Lake Easterly	4.00	Oso	Frontenac	8,306.85
656	Caderette Corners–Highway No. 64	4.15	Caldwell	Nipissing	4,035.67
657	Minden Bay Road	3.75	Sherborne et al	Haliburton	23,655.44
658	Carnavon–Quinn's Corners	3.00	Minden and Stanhope	Haliburton	54,685.23
659P.E.	Ninth Line Road	12.00	Dummer	Peterborough	16,536.80
660	Townline, Hwy. No. 11–Sec. Rd. 569	3.00	Harley and Hilliard	Temiskaming	19,997.19
661	Kerr Line Road	5.50	Ross	Renfrew	52,456.07
662	Casselman Westerly Road	1.50	County	Prescott and Russell	32,354.91
663	Casselman Easterly Road	3.90	County	Prescott and Russell	95,617.74
664	Miller Road (part)	3.50	Chapman	Parry Sound	21,770.67
665	Ella Lake Road	2.20	Capreol	Sudbury	31,026.99
666P.E.	Sixth Line, County Road No. 4–Hwy. No. 28	8.00	Douro	Peterborough	7,964.39
667	Seeley–Brunel Road	3.70	Brunel	Muskoka	20,109.42
668P.E.	Panmure–Highway No. 44	4.50	Huntley	Carleton	2,264.65
669P.E.	Brussels–Highway No. 86	6.25	County	Huron	7,437.56
670	County Road No. 12 (part)	15.00	County	Huron	91,927.84
671	Black Bridge Mathiasville	3.25	Draper	Muskoka	3,493.94
672P.E.	Provost Corners Northerly	3.50	Marmora and Lake	Hastings	4,073.38
673P.E.	Concession 11 Road	1.50	Cramahe	Northumberland and Durham	1,838.99
674P.E.	Hanover–Chesley	9.00	County	Bruce	8,536.05
675	Otter Lake Road (part)	2.70	Loughborough	Frontenac	9,434.42
676	River Road, County Road No. 3	13.80	County	Renfrew	57,613.58
677	County Rd. No. 18, Hwy. No. 401 southerly	0.45	County	Northumberland and Durham	85,615.44
678P.E.	County Rd. No. 18, Hwy. No. 401 northerly	2.25	County	Northumberland and Durham	3,997.61
679	Fairbanks Lake Park Road	7.20	Drury, Denison and Graham	Sudbury	16,612.21
680	Killbear Park Road	5.60	Carling	Parry Sound	6,463.15
681P.E.	Thickson Road (part)	6.30	County	Ontario	4,792.29
684P.E.	County Rd. No. 9, Hwy. No. 24 southerly	8.40	County	Norfolk	2,156.70
685	Kap-Kig-Iwan Park Road	1.30	Evanturel	Temiskaming	7,909.26
686P.E.	Lots 12/13, Concession II and III	1.75	South Monaghan	Northumberland and Durham	1,891.40
687D.R.	Paincourt Easterly	1.00	Dover	Kent	12,833.79
688D.R.	Townline Road	1.40	Middleton and N. Walsingham	Norfolk	11,823.07
689P.E.	Yonge Boundary–Highway No. 29	7.00	Elizabethtown	Leeds and Grenville	3,502.30

690P.E.	Egan Creek Bridge Approaches	0.40	Dungannon	Hastings	4,371.22
691P.E.	Golf Links Road Extension	0.75	Shuniah	Thunder Bay	722.28
692P.E.	County Road No. 36 (part)	4.20	County	Elgin	2,537.01
694P.E.	County Road No. 1 (part)	4.40	County	Northumberland and Durham	1,957.31
695P.E.	County Road No. 17 (part)	9.20	County	Simcoe	11,436.70
696	Beaver Creek Bridge		Limerick	Hastings	2,111.89
698P.E.	Old Garden River Road	2.80	Tarentorus	Algoma	2,340.61
699	Weslemkoon Road (part)	0.35	Tudor and Cashel	Hastings	2,502.37
700P.E.	Stoney Lake N. Shore Road	5.50	Burleigh	Peterborough	9,728.08
701P.E.	County Road No. 3–Mud Lake I.R.	2.70	Smith	Peterborough	2,181.76
702P.E.	Coopers Falls–Housey Rapids	5.00	Ryde	Muskoka	1,955.75
703P.E.	Healey's Falls Road	4.40	Seymour	Northumberland and Durham	3,828.65
704P.E.	Roseneath Easterly	2.90	Alnwick	Northumberland and Durham	4,487.35
706P.E.	Base Line Road Bowmanville Westerly	5.40	Darlington	Northumberland and Durham	6,346.95
707P.E.	Concession IV/V Road	5.40	Hagar	Sudbury	4,297.16
708	Burk's Falls East and Southerly	2.00	Armour	Parry Sound	242.64
709P.E.	Machar Lake Bridge		Machar	Parry Sound	1,355.66
710P.E.	Brunelle Road	2.10	Val Albert I.D.	Cochrane	2,573.39
711P.E.	County Rd. No. 4, Frankford–Hwy. No. 401	5.10	County	Hastings	3,338.03
714P.E.	Birch Creek Bridge		Hallam	Sudbury	4,818.21
715P.E.	Road to Ontario Hospital	2.10	Sydenham	Grey	3,492.30
717P.E.	River Road		N. Gower	Carleton	2,687.66
719P.E.	Between Lots 12/13, Con. II–VIII	6.00	Mountain	Stormont, Dundas and Glengarry	2,127.44
720P.E.	Between Lots 10/11, Con. V	0.85	Gillies	Thunder Bay	307.87
721P.E.	County Road No. 18 (part) and No. 5 (part)	4.00	County	Grey	8,889.44
722P.E.	County Road No. 7 (part)	7.00	County	Stormont, Dundas and Glengarry	3,569.97
	Preliminary Surveys — Wilroy Road	2.20	Manitouwadge	Thunder Bay	411.18
	TOTALS	962.67			$7,717,544.19

APPENDIX No. 15

ROAD MILEAGES IN ONTARIO, DECEMBER 31, 1962

	Total Miles	Type of Pavement				
		Concrete	High-cost Bituminous	Low-cost Bituminous	Gravel and Crushed Stone	Earth
King's Highways	9,447.1	357.4	6,885.2	1,523.1	681.4	.....
Secondary Highways	2,763.4	.....	126.0	582.0	2,037.9	17.5
Tertiary Roads	21.3	.....	.....	.....	21.3	.....
Total King's Highways	12,231.8	357.4	7,011.2	2,105.1	2,740.6	17.5
County Roads	9,242.6	67.4	1,858.1	4,010.7	3,301.6	4.8
Organized Townships	48,266.6	54.4	1,645.0	2,447.3	40,788.2	3,331.7
Unorganized Townships	4,270.3	.....	1.1	6.4	3,642.1	620.7
Total Municipal Roads*	61,779.5	121.8	3,504.2	6,464.4	47,731.9	3,957.2
Total All Rural Highways and Roads	74,011.3	479.2	10,515.4	8,569.5	50,472.5	3,974.7
Metropolitan Roads	344.0	1.8	334.1	6.3	1.8	.....
City, Town and Village Streets*	9,227.4	500.6	3,336.8	2,910.6	2,242.0	237.4
Total Urban Streets	9,571.4	502.4	3,670.9	2,916.9	2,243.8	237.4
GRAND TOTALS - 1962	83,582.70	981.60	14,186.30	11,486.40	52,716.30	4,212.10
- 1961	85,903.81	848.12	13,255.70	11,120.66	52,491.85	8,193.48
- 1960	85,830.11	1,041.04	12,160.05	7,294.89	56,308.13	9,026.00
- 1959	85,526.75	1,148.66	11,419.11	6,271.03	57,093.14	9,594.81
- 1958	85,092.80	1,136.89	10,010.68	6,641.04	56,456.06	9,848.13
- 1957	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02
- 1956	83,508.24	1,337.88	9,188.73	5,750.73	56,597.11	10,433.76

* Undeveloped Road Allowances not included (Total: 4,045.2 miles).

CHRONOLOGY—DEPARTMENT OF HIGHWAYS

1962

March 19 — Department estimates for 1962-63 presented to the Legislature by Hon. W. A. Goodfellow.

June 23 — A 61-mile extension to Highway 101 from Foleyet to Chapleau officially opened by Hon. W. A. Goodfellow.

July 4 — Mr. W. J. Fulton retired as Deputy Minister of Highways.

July 20 — Secondary Highway 637 from Trans-Canada Highway 69 to Killarney officially opened by Hon. W. A. Goodfellow.

September 11 — A 13-mile section of Highway 401 from Cornwall to Lancaster was opened to traffic.

October 13 — Ontario's first "Industrial Road" from Manitouwadge to Caramat opened for public travel.

October 17 — First contract for widening the Toronto By-pass section of Highway 401 to 12 lanes between Islington Avenue and Highway 48 was awarded for a one-mile section from Avenue Road to Hogg's Hollow.

October 25 — Hon. C. S. MacNaughton appointed Minister of Highways.

October 31 — Sault Ste. Marie International Bridge officially opened by Provincial Treasurer James N. Allan and Michigan Governor John B. Swainson.

November 1 — Queenston–Lewiston International Bridge opened to traffic.

November 12 — Premier Robarts and Highways Minister MacNaughton announced plans for a $10-million tunnel under the Welland Canal in the City of Welland and a new controlled-access Highway 406 between the Q.E.W. at St. Catharines and Welland.

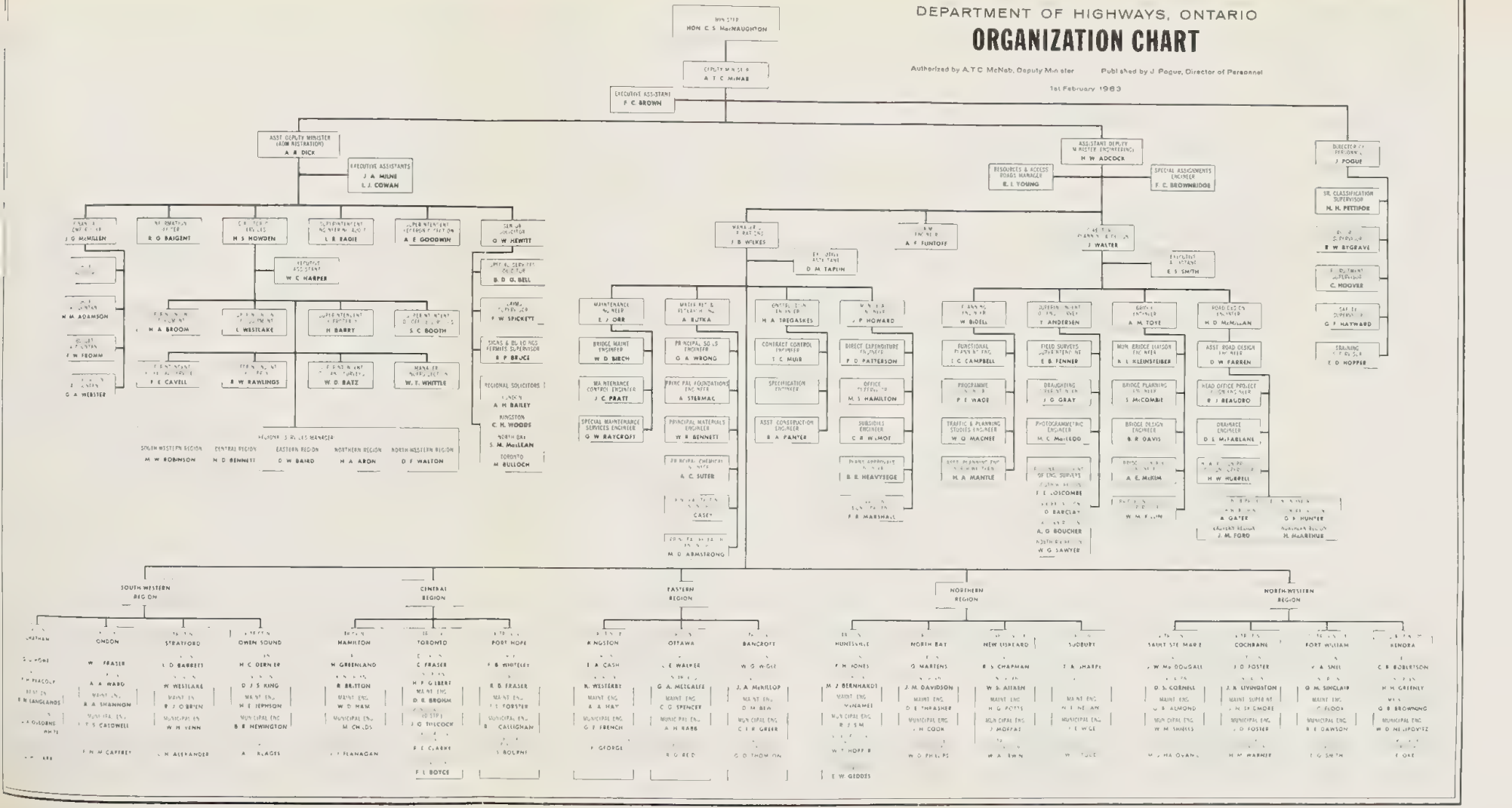
November 29 — A 14-mile section of Highway 401 from Napanee to Odessa was opened for traffic.

DEPARTMENT OF HIGHWAYS, ONTARIO

ORGANIZATION CHART

Authorized by A.T.C. McNab, Deputy Minister Published by J. Pogue, Director of Personnel

1st February 1983



Government Publications

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ONTARIO
PROVINCE OF OPPORTUNITY

Annual Report

OF THE

Department of Highways

ONTARIO

FOR THE FISCAL YEAR ENDING MARCH 31st

1964

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

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SESSIONAL PAPER NO. 20

Printed and Published by Frank Fogg
Printer to the Queen's Most Excellent Majesty

TORONTO

1964

To The Honourable W. Earl Rowe,
Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1964.

Respectfully submitted,

Charles S. MacNaughton,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
December 27, 1964.

To The Honourable Charles S. MacNaughton,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31st, 1964.

The report covers the operations of the several Branches including the report of the Chief Engineer and the Operations Branch, Planning and Design Branch, Financial Comptroller's Branch, Services Branch and Municipal Roads Branch.

I have the honour to be, Sir,

Your Obedient Servant,

A. T. C. McNab,
Deputy Minister.

Department of Highways, Ontario,
December 20, 1964.



Honourable Charles S. MacNaughton, Minister of Highways.

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DEPUTY MINISTER'S REPORT — 1963-64

by A. T. C. McNAB, *Deputy Minister of Highways*

During the year a number of significant highway projects were completed and opened for traffic complementing the Ontario Highway System, which has become one of the finest on the continent.

In October the $20 million Garden City Skyway over the Welland Canal at St. Catharines was officially opened. This new skyway — Ontario's second toll bridge — eliminates the last major bottleneck on the Queen Elizabeth Way between Toronto and Fort Erie.

In the same region of the province, a new four-lane, controlled-access highway, designated No. 405, was officially opened to traffic in September. The new six-mile freeway connects the Queen Elizabeth Way with the new Queenston-Lewiston International bridge.

In December, the first stage of Highway 403, another multi-lane, controlled-access highway, was completed and opened to traffic from the Queen Elizabeth Way to Longwood Road in Hamilton.

In northern Ontario a new 12-mile section of Highway 11, known as the Tri-Town By-pass, around the towns of Cobalt, Haileybury and New Liskeard, was put in service in September.

In northwestern Ontario a new international bridge across the Pigeon River between Canada and the United States was opened in November. The new international bridge was constructed as a joint project by the Department of Highways, Ontario, and the State of Minnesota.

By the end of the year all contracts for grading of the 86 miles of new Highway 11, between Atikokan and Fort Frances, had been awarded and construction is progressing on this project with a view to having the road open for traffic during the latter part of 1964 or early in 1965.

On the main route of the Trans-Canada Highway 1,095 miles of the total 1,453 miles of Trans-Canada Highway through the province were constructed to the high standard required for all Trans-Canada Highway mileage in the country.

During the year 98 miles of Trans-provincial Highway 401 were opened for traffic, making possible a through drive of 502 miles on Highway 401 from Windsor to the Village of Lancaster, eight miles west of the Quebec boundary. Other important developments in connection with Highway 401 during the year were the opening of permanent service centres at eight locations between Belleville and London, and the introduction of an interchange numbering system, as an additional guide for motorists using this freeway.

Other noteworthy highway projects completed in 1963 were: The Freeport Diversion, a two-and-a-half mile section of controlled-access road which became part of Highway 8 between Highway 401 and Kitchener; Highway 126, a new controlled-access highway between Highway 401 and the eastern end of the City of London, which was opened to traffic in December and in August, 31 miles of former Lambton County Road No. 3 from Courtright to Alvinston were added to the King's Highway system as an extension to Highway 80.

Under the "Roads to Resources" program, construction continued on the Savant Lake Road, the Spruce River Road and the new road from Central

Patricia to Lingman Lake. In October it was announced that a new road would be built under the "Roads to Resources" program to extend Highway 108 from Elliott Lake to Highway 129 through the newly developed Mississauga Provincial Park. In February the Department's second "Industrial Road" agreement was signed, allowing the public to use the private road between Ignace and Valora, thereby providing a road link between Trans-Canada Highway 17 and the Savant Lake-Pickle Crow area.

The program to widen the Toronto By-pass section of Highway 401 to 12 lanes between Islington Avenue and Highway 48 — a distance of 17 miles — is on schedule. Seven major contracts for the construction of interchanges between Yonge Street and Highway 400 were awarded during the year. Two of these: namely, the Spadina Expressway and the Highway 400 complex are of three-level construction. To facilitate motorists using this section of Highway 401 while the widening to 12 lanes is being carried out, the Department introduced a 24-hour emergency patrol service between Highway 27 and Kennedy Road.

Construction of a new controlled-access highway between Highway 401 and the International Air Terminal at Malton, as well as widening of Dixon Road to four lanes from the new airport to Highway 27 is nearing completion.

The first contracts for the construction of a new controlled-access highway, known as Highway 406, which will run from the Queen Elizabeth Way to Welland, were awarded in January.

Construction also got under way during the summer on the Brantford By-pass section of Highway 403.

In April the Department awarded a contract for the approaches to the new Macdonald-Cartier interprovincial bridge between Ottawa, Ontario, and Hull, Quebec. Building of this new structure is a joint project between the Federal Government and the highway departments of Ontario and Quebec.

It was announced during the year that a new highway would be constructed between Sudbury and Timmins, a distance of 104 miles, and clearing of the right-of-way will begin this winter. It was also announced that 40 miles of new road will be constructed from Highway 11, near Smooth Rock Falls northerly to Fraserdale, opening another area of northern Ontario for development and recreation.

Other noteworthy developments during the year were the increases in subsidy rates for construction and maintenance of roads under City, Town and Township jurisdiction and the announcement in June that a new needs study to re-evaluate the requirements of each county road system in the province will be under way during the next two years.

Two new road maps were issued this year for the first time — a map of northern Ontario showing, in addition to regular road map features, campsites, historical sites and the location of natural resources, and a road map of Highway 401 showing interchange numbers, service centres and recreational facilities along this route.

As of March 31, 1964, our highway system included 9,749.4 miles of King's Highways and 2,859.3 miles of Secondary Highways and 119.1 miles of Tertiary roads — a total of 12,727.8 miles.

Contracts Completed

During 1963-64 capital contracts were completed on 241 miles of grading, 277 miles of hot mix paving and 34 structures. Completed capital contracts totalled 185 and maintenance contracts totalled 155.

Some 261 capital contracts and 178 ordinary (maintenance) contracts were awarded in 1963-64. New capital work includes 374 miles of grading, 339, miles of hot mix paving and 46 structures of various types. Maintenance contracts covered 2 for hot mix paving, 8 for surface treatment and 19 for winter sanding.

Index

The index of tender prices paid on road contracts rose during the year indicating somewhat higher unit prices. The index was 150.6 for 1963-64 as compared with 129.0 in 1962-63 and the ten-year high of 156.8 in 1956-57.

The index of prices for road materials purchased by the Department rose slightly from 110.3 in 1962-63 to 110.4 in 1963-64.

Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	Fiscal Years Ending March 31, 1964	March 31, 1963
Gross capital payments on construction of King's Highways and Secondary Highways	$138,795,163	$124,945,522
Less: Recoveries on (1) Trans-Canada Highway, (2) Ottawa Queensway, (3) Railway Bridges, (4) Niagara Falls Bridge Commission, (5) City of Ottawa	6,686,686	7,768,418
Net capital payments on construction of King's Highways and Secondary Highways	$132,108,477	$117,177,104
Ordinary expenditure on King's Highways and Secondary Highways including maintenance and general operating expense	47,841,283	48,899,218
Provincial subsidies on municipal roads and streets and cost of development roads and roads in unincorporated townships	100,527,229	85,076,423
Total Net Expenditures	$280,476,989	$251,152,745

Information Section

Robert G. Baigent, Information Officer

A primary function of the Information Section is to tell the public about the Department's future plans for highways, work in progress, major projects completed, new construction techniques employed, research being carried out, and so forth.

The manner in which this is done may be divided into two basic categories: first, the day-to-day handling of enquiries from the public — including news media of many types — and, as well, from within the Department itself, on almost every subject related to highway construction and maintenance

The other main category is the *creation* of material which the Section makes available to daily and weekly newspapers, radio and TV stations, trade magazines and others, such as transport companies, travel agencies and touring services. Generally, such material takes the form of press releases, frequently augmented by maps especially drawn for the purpose and photos with news-style

captions. In the case of the completion of some of the larger projects, Fact Sheets are also produced.

The 1963 edition of the annual Year-end Round-up Report of construction and other significant developments within the Department was widely used by daily newspapers throughout the province, as well as by the trade press.

Another way in which the record of highway construction accomplished in a given period was told was in articles written for various publications, most commonly daily newspapers. In such cases these progress reports dealt mainly with highway improvements in a newspaper's circulation area. Several articles of this type — together with a selection of supporting photos and maps — were produced, all of which were printed in full in various parts of the province.

The main objective in making all informative material available in printed form is to provide the information in such a way that public understanding of the department's problems will be obtained. Thus, a greater appreciation on the part of the public of some of the many factors involved in departmental policy may be earned and support gained for these policies and the Department's program as a whole.

Another function of the Information Section is to assist writers — on the staff of established news media and freelance writers — in their preparation of feature articles. This assistance takes many forms, such as making material available to them, arranging interviews with departmental personnel, assistance in the selection of illustrations and finally, wherever possible, to obtain clearance for their articles prior to publication.

A new type of multi-coloured map featuring Northern Ontario was produced by the Department of Highways in consultation with other provincial departments concerned. One of the two large maps in the folder shows Northern Ontario, pictorially depicted, drawn on a scale larger than anything previously published in this form.

A prime purpose of the new folder was to promote tourism in Northern and Northwestern Ontario by drawing attention to the many attractions of those regions. However, the host of factual information and historical lore it provides ensure that it will accomplish much more, such as for school use, to name only one application.

Eight issues of the department's employee magazine, the "D.H.O. *News*" were published during the fiscal year.

Publication of the Official Road Bulletin of Ontario every two weeks, between May and November, by the Information Section again earned wide appreciation. This service was supplemented by providing major news media with Week-end Road Reports listing specific points where motorists might meet some inconvenience. Checks showed that these reports received wide distribution through the Canadian Press and that they were also picked up by many weeklies.

Exclusively for TV stations, the Information Section produced film clips for use in Ontario and the border states of the U.S.A., on such topics as: Litterbugs, Damage to D.H.O. Highway Signs and Markers by Hunters, How to Pass Safely the Department's Snow Blowers, and a re-issue of the announcement: "Watch for the flashing blue light". To date TV "messages" of this type have been seen by millions of viewers. Air time was donated free by the stations.

Release of the first prints of the department's new film, "Carnival Country", — which promotes the province's many winter recreation attractions and the ease with which they may be reached on good roads — were made before the end of the fiscal year. Distribution extended across Canada and the United States. Prints were also sent to Ontario House, London, England.

The Information Section is also responsible for the compilation, editing and publication of the Department's Annual Report.

Electronic Computing Centre

A. E. Goodwin, P.Eng., Manager.

During the past fiscal year six major events occurred in the Electronic Computing Centre worth reporting.

I.B.M. 7040 Computer System Installed

On November 15, 1963 the Centre took delivery of the most advanced computer, the I.B.M. 7040, with an internal calculating speed one-hundred times that of its predecessor the I.B.M. 650, which was retired after serving honourably since 1958.

This new computer is linked with a Satellite I.B.M. 1401 computer to form an integrated tape-oriented high speed data processing system which is operated under the control of a program monitor which allows the continual processing of a series of jobs without manual intervention. This feature provides tremendous flexibility in handling the large variety of work for which the Centre is responsible.

Critical Path Technique Applied to Control 401 Toronto By-pass Widening Project

The 401 widening project which involves expansion from four to twelve lanes is the most complex single project ever handled in Ontario. It contains more than twenty independent contracts each of which is related in time, so that sophisticated scheduling of award and completion dates had to be established and continuously maintained. This presented a problem to top management and a proposal to use critical path as a means of solving this problem, using the new computer, was accepted. The responsibility for this work has been placed with the Electronic Section and an implementation group has been established in the section with the sole function of handling the critical path applications, which are extensive.

Traffic — Regional Planning Studies

During this year the use of Traffic Studies as a major planning tool was extended greatly due to the increased processing power of the new I.B.M. 7040. The need for greater speed of processing larger jobs has been met by the Centre with the fullest co-operation of the Traffic Section who worked closely with the Centre during the development of the new set of 7040 programs.

Final Pay Quantity Calculation

All districts have been included in the processing of final pay quantities at the Centre. The jobs handled can be either earth or rock, or a combination and are handled in exactly the same way. A feed-back technique using a "Consolidation Listing" was introduced, and has helped to reduce errors in work submitted from the district field staffs.

Equipment Replacement Study

For the first time in the history of the Department a method has been developed which determines which vehicles should be considered first for replacement. This is a prime example of the use of the "Management by Exception Principle", for all vehicles with abnormal maintenance costs are pointed out for closer investigation. A new era of Scientific Management has been introduced with the success of this project and it is expected that this technique will be applied in many other highway fields.

Scheduling Reports of The Highway Program

The computer is now generating the current schedule of the Highway Program, which includes the hundreds of projects with detailed information associated with each one. Before the advent of this report it was not known when each department could expect to receive work assigned to it.

Production

Those jobs performed during the year are as follows:

Planning Branch

Functional Planning Section	Total Jobs
Planning Program for Year — 1960–61	4
" " " " — 1961–62	3
" " " " — 1962–63	3
" " " " — 1963–64	21
" " " " — 1964–65	26
" " " " — 1965–66	19
" " " " — 1966–67	12
" " " " — 1967–68	13
" " " " — 1968–69	5
" " " " — 1969 and later	11
All years listings	12
Work Project Scheduling Report	2
TOTAL	131

Traffic Section

Job Type:	No. of Jobs
Origin and Destination Surveys	111
Transportation Studies	126
Traffic Characteristics	391
TOTAL	628

Design Branch

Road Design Division	Miles	Jobs
Quantity Calculations	103	19
Road Elevations Reports	170	40
Interchange Connections		23
Cross Section Plots	15	3
TOTALS		85

Location Survey Section	Jobs
Bridging Procedures	80
Graph Plotting	26
Cross Section Reports	57
TOTAL	163

Bridge Division	Total Jobs
Geometrics and Elevations on a Straight Alignment	81
Solution of Simultaneous Equations	33
Single Span Rigid Frame Design	123
Calculation of Reinforcing Steel Quantities	165
Geometrics and Elevations on a Circular Alignment	10
Geometrics and Elevations of Skew Bridges with Parallel Piers on a Circular Alignment	4
Geometrics of Radial Bridge Piers on Transition Curves	8
Properties of Homogeneous Sections	35
Single Box Culvert Design	14
Composite Beam Design (welded plates)	51
Composite Beam Design (W.F. Sections)	23
Bridge Clearances	7
Offsets to a Curve from a Straight Line Perpendicular to a Radius	1
Frame Constants for Continuous Bridges	114
Truck Live and Dead Load Moment Envelopes for Continuous Bridges	242
Lane Live and Dead Load Moment Envelopes for Continuous Bridges	237
Influence Lines for Moments and Shears for one Span Bridges	6
Influence Lines for Moments and Shears for two Span Bridges	62
Influence Lines for Moments and Shears for three Span Bridges	308
Influence Lines for Moments and Shears for four Span Bridges	67
Influence Lines for Moments and Shears for five Span Bridges	65
Live Load, Shear and Reactions for Continuous Bridges	230
Data Costing	7
Live Load Deflections for Continuous Beams	90
Concrete Quantities	199
Single Span Composite Beam Analysis	50
Properties of Plate Girders	258
Dead Load Deflections for Continuous Beams	112
Temperature, Shrinkage and Sideways Analysis	5
Design of Round Columns subjected to Biaxial Bending	8
Prestressed Beam Analysis	161
Elevations on a Straight Alignment with Tangent Runout	21
Single Box Culvert Analysis	36
Geometrics and Elevations for Structures on Horizontal and Vertical Curves	145
Pier Geometrics for Structures on Horizontal Curves from Highway Intersection Layout	69
Geometrics and Elevations on Horizontal Curves	9
Elevations of Parallel Girders on a Horizontal Curve	3
Offsets to a Circular Curve	144
Offsets to a Spiral Curve	41
Offsets to Bent Girders	1
Retaining Wall Design and Analysis	46
Girder Splice Design	4
Rigid Frame Pier Design	1
Analysis of Continuous Prestressed Concrete Bridges	89
Erection and Anchorage Losses in Continuous Prestressed Girders	24
Tables for Eccentrically Loaded Circular Columns	14
Design of Rectangular Columns subjected to Biaxial Bending	47
TOTAL	3,470

Operations Branch

Final Pay Section	Total Miles	Total Jobs
Original Quantity Calculations	334	107
Intermediate Consolidation Reports	6	1
Final Quantity Calculations	167	35
TOTALS	507	143

Electronic Computing Branch

System Implementation Section	Jobs
Critical Path Reports	41

Services Branch

Equipment Section	Total Jobs
Monthly Equipment Costs for 26 Districts	312
Quarterly Equipment Costs for 26 Districts	4
Quarterly Consumption Report	4
Quarterly Maintenance Cost Control	3
Usage Report	1
Progressive Accumulative Costs	2
Monthly Invoicing	12
Yearly Cost Depreciation	1
Inventory Listings	50
TOTAL	389

Land Survey Section	Properties	Acquisitions	Jobs
Head Office	.....	.....	7
Toronto	424	412	85
Kingston	577	520	211
London	78	61	8
Fort William	372	379	55
North Bay	386	277	57
Geodimeter Surveys	.....	.....	22
TOTALS	1,837	1,649	445

Financial Comptroller's Branch

Reports Prepared Fiscal Year 1963-1964

Budget Section

Budget Work Order Listing	Monthly
Capital Commitment Ledger	Monthly
Ordinary Commitment Ledger	Monthly
Financial Position of Contract	Monthly
Budget Summary by indication Code & Project listings	Quarterly
Refund Listing Statement	Monthly
Ordinary and Capital Expenditures Statement	Monthly

Chief Accountant's

Main Office Salaries	Monthly
Class "9" Statement	Monthly
Ordinary and Capital Accumulative Expenditure	Monthly
Main Office Accumulative Expenditure	Monthly
Commodity Ledger	Monthly
Permanent and Temporary Salaries	Monthly
Casual Salaries	Monthly
Main Office Permanent and Temporary Salaries	Monthly
Main Office Casual Salaries	Monthly

Chief Accountant's

Casual Transfers and Accounts Receivable	Monthly
Main Office Casual Transfers and Accounts Receivable	Monthly
Dominion Bureau of Statistics Report	Monthly
Head Office Budget Checking List	Monthly
Main Office Budget Checking List	Monthly
Statement of Truck Rentals	Monthly
Statement of Equipment Rentals	Monthly
Expense Claim Cheque Registers	Daily
Casual Payroll Cheque Registers	Weekly
Casual Draft Payroll Sheets	Weekly
Expense Claim Cheques Outstanding Lists	Bi-Monthly
Payroll Cheque Outstanding Lists	Monthly
Casual Payroll Deduction Listings	Weekly
Public Accounts	Quarterly
Casual Payroll Unemployment Insurance	Weekly
Commission Listings	Weekly
Head Office Journal Listings	Weekly
Accounts Payable Invoice Distribution and Requisition for Payment	Twice Daily
Accounts Receivable Balance and Class Total List	Twice Weekly
Transfers Balance and Class Total List	Daily
Cash Sheets (R. & E.R. Vouchers) Class Total List	Twice Weekly
Journal Entries Balance and Class Total List	Twice Weekly
Class 3 and 9 Statement	Daily
Class 9	Weekly
Permanent and Temporary Salary Lists	Monthly
Permanent and Temporary Civil Service Association Deductions	Monthly
Owner Operated Equipment Balance List	Twice Monthly
Annual Report	Yearly
Municipal Subsidies	Yearly
Property Report	Monthly
Acquisition Report	Monthly
Coding Differences	Monthly
Contract Claims	Monthly
Contract Claims Sales Tax	Monthly
Contract Payment Certificate	Monthly
Contract Force Account	Monthly
Commodities 985–990 Report	Monthly
Main Office Transfers	Monthly
Head Office Budget Statements (3)	Monthly
Casual Payroll Summary	Quarterly
Unemployment Insurance Commission Slips	Yearly
T-4 Slips	Yearly
Contractors Payments	Twice Yearly

Audit Section

Sundry Owner Operated Equipment	Monthly

Documents Received and Processed During Fiscal Year 1963-64

Amounts	Description
303,109	Invoices and Expense Claims
16,134	Accounts Receivable
17,850	Transfers Branch Transfers, White Journal Entries Stock Requisitions
540	Casual Paylists
302	Cash Sheets — Cashiers Voucher Sheets in R. & E.R. Series
408	Journal Entries — Inter Departmental Journal Entry Advices (green)
306	Permanent and Temporary Salary Requisitions
13,442	Budget Work Orders
19,198	Budget Expenditure Sheets
3,102	Budget Heading Sheets

Cheques Written

19,272	Expense Claim Cheques
15,033	Casual Payroll Cheques written and signed

Signs and Building Permits Section

Calendar Year 1963-64

Building Permits:	
Applications received	4792
Permits issued	4607
Entrance Permits:	
Applications received	2596
Permits issued	2410
Encroachment Permits:	
Applications received	1207
Permits issued	1135
Sign Permits:	
Applications received	6021
New permits issued	1594
Permit renewals	4275
Gasoline Pump Permits:	
Applications received	4178
Permits issued	3906

NOTE: Licences are issued according to the calendar year, January 1 to December 31.

NUMBER AND VALUE OF KING'S HIGHWAY PERMITS ISSUED

DISTRICT	NUMBER ISSUED	VALUE OF PERMITS ISSUED
Chatham	497	$4,136,500
London	272	3,190,000
Stratford	303	3,400,000
Hamilton	399	8,500,000
Owen Sound	309	1,750,000
Toronto	281	12,800,000
Port Hope	257	2,850,000
Kingston	261	2,215,000
Ottawa	190	2,680,000
Bancroft	185	820,000
Huntsville	257	2,605,000
North Bay	391	2,000,000
New Liskeard	79	798,000
Cochrane	208	1,050,000
Sudbury	165	2,100,500
Sault Ste. Marie	144	1,000,500
Fort William	119	895,000
Kenora	180	2,080,000

FIELD ADVERTISING SIGN PERMITS ISSUED

Number of Field Advertising Sign Permits issued for calendar year	5,869
Value of Field Advertising Sign Permits issued for calendar year	$31,859.50

NOTE: Permits are issued for the calendar year.

GASOLINE PUMP PERMITS ISSUED

Number of Gasoline Pump Permits issued for calendar year	3,906
Value of Gasoline Pump Permits issued for calendar year	$29,115.00

NOTE: Permits are issued for calendar year.

Engineering Audit Section

The function of the Engineering Audit Section is to check that payment for contract work is based on actual work performed under the terms of the various standards and specifications, and that the quantities so paid for are mathemat-

ically correct. This work is carried out by two sub-sections known as the Field Audit Group, under the direction of a field audit supervisor, and the Contract Checking Group, under the direction of the contract checking supervisor.

Field Audit Group

This staff is established on a regional basis, with each region composed of a supervisor, assistant supervisor, two field parties, weigh inspector, and one office clerk draftsman. Basic function of each regional staff is, to ensure by means of random spot checks, that work paid for is physically done as required. Spot field surveys are performed on pre-engineering measurements, on progress measurements, and on final payment measurements on capital, maintenance, and Development Road contracts. The weigh inspector performs random spot-checks on weighing operations for the above contracts. The regional supervisor and his assistant spot-check various calculations which support the progress measurements on the contracts, to ensure that such quantities are realistic and equitable. Reports are also prepared on various force account work, work orders, intents to claim, and other matters as required, pertaining to measurement and payment. Reports are forwarded to the various district engineers and other persons concerned, under covering letter of the Superintendent of Engineering Audit. Where problems arise, which are not clearly covered by specifications, these problems are referred to the Manager of Operations for disposition, and in this way, uniform treatment is given throughout all districts in the Department of Highways.

As an adjunct to the field audit duties, the field supervisor directs an estimating group, which is located at Downsview. The function of this group is to spot-check various pre-engineering estimates, to ensure that they adhere to normal estimating procedures, as established by the Road Design Division. Random final estimates, which have been processed by the contract checking group, are doubly checked by the estimating group, to ensure that normal checking procedures are being applied to final estimates. Other reports are compiled, regarding various problems, including some contractor's claims, at the request of the claims engineer.

During the fiscal year of 1963-64, more than 262 field audits were performed, and 407 office audits.

In addition to his other duties, the regional supervisor or his assistant attend all contract review meetings, which are held sometime after finalization of the contract. In the past year, these meetings have been extended in many cases to cover pre-engineering estimates on Development Roads, and some Connecting Link contracts.

Contract Checking Group

This group, under the direction of the contract checking supervisor, is divided into four checking groups. The supervisor also is in charge of the "AS CONSTRUCTED PLANS & PROFILES" drafting group. The checking group carries out its usual function of examining in detail the final estimates for various contracts, and verifying the final quantities, upon which payment will be made to the contractor. Reports are compiled on all final estimates, which as well as verifying final payment quantities, outline deficiencies in the records, and indicate the standard to which the field records and calculations are being kept. All capital contracts, both construction and maintenance, Development Road contracts, and some Connecting Link contracts, were reviewed in the past year.

The following is a list of the various districts, showing the final estimates processed as well as the monetary value in the past fiscal year.

	Construction		Maintenance		Invitation Bid		Dev.
	No.	Value	No.	Value	No.	Value	Roads
Chatham	27	$ 8,562,801	12	$ 137,761	1	$ 2,181	....
London	26	5,356,671	11	575,055	2	11,376	1
Stratford	15	1,979,375	10	118,042	6	31,650	....
Hamilton	26	9,623,440	15	606,611	11	96,764	....
Owen Sound	12	1,354,460	9	148,914	2	12,571	1
Toronto	22	5,876,326	18	835,204	12	125,723	2
Port Hope	13	2,703,930	13	233,197	1	13,117	1
Kingston	22	4,616,968	8	250,120	3	42,354	4
Ottawa	28	9,623,246	12	642,797	4	14,268	1
Bancroft	15	1,944,157	8	123,566	....	.....	7
Huntsville	16	608,301	15	435,639	....	.....	....
North Bay	12	1,174,330	8	169,614	....	.....	....
New Liskeard	15	2,760,863	9	93,441	1	7,380	....
Cochrane	6	1,862,443	6	120,970	....	.....	....
Sudbury	11	2,166,967	14	191,759	....	.....	....
Sault Ste. Marie	13	2,387,218	6	102,004	....	.....	....
Fort William	25	3,389,010	1	6,231	1	7,031	....
Kenora	11	4,023,586	5	64,218	1	5,971	....
Totals	315	$70,014,092	180	$4,885,143	45	$370,386	17

As in the previous year, there was a considerable exchange of staff between the contract checking group and the field parties. Extra field parties were put in the field from Head Office during the construction season, and during the heavy checking months in the winter, additional staff was recruited from the outside regions.

The total number of construction contracts checked in the fiscal year ending March 31, 1962, was 251, as compared to this year's total of 315 — an increase of 64 contracts. A comparison of maintenance contracts shows an increase of 33, from 147 to 180. The total number of invitation bid contracts reviewed decreased by 27. In addition to these contracts, a total of 17 Development Road contracts were processed, which were additional to our normal procedure.

LEGAL BRANCH

D. A. CROSBIE, *Director*

Reorganization

Centralization of the department's legal staff was commenced by the transfer to the main office of the regional solicitors in the Kingston and North Bay regional offices. The regional solicitors in London and Toronto have not yet been affected by the centralization program. The transfers effected will result in there being four solicitors in addition to the director, located in the main office of the department at Downsview to prepare agreements and other legal documents and to provide legal services and advice to the various branches of the department and to assist and advise the regional solicitors in London and Toronto when necessary. The regional solicitors in London and Toronto prepare and approve deeds and other documents and advise regional and district staff on legal matters.

The Signs and Building Permits Section, previously part of the Legal Branch, has been transferred to the Operations Branch.

Insurance and Claims Section

This section is responsible for the insurance policies carried by the department and for some motor vehicle liability policies carried by other departments of the government. The section investigates and supervises the settlement of claims made against the department under The Workmen's Compensation Act. There are other miscellaneous types of tortious claims which are also dealt with by this section.

VOLUME OF CLAIMS AND INVESTIGATION

The volume of claims and their various categories for the fiscal year under review (with comparative figures for 1962–1963) is as follows:

	1963–64	1962–63
Claims against Department — non-repair of highway	657	687
Claims against Department — miscellaneous liability	427	304
Claims by Department — for damage to Department property	3,830	3,309
Claims by Department — for personal injuries to employees	57	188
Investigations of accidents — involving Government vehicles	805	995
TOTALS	5,776	5,483

It will be noted that the actual number of claims for 1963–64 amounted to 293 in excess of 1962–1963.

The above figures do not include miscellaneous types of minor complaints which were also investigated and resolved.

REPORT OF THE FINANCIAL COMPTROLLER

COMPTROLLER, J. G. McMILLEN, C.A.

The following statements outline the expenditure and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1964.

I. Ordinary Expenditure
II. Capital Payments, including Expenditure Summary
III. Trans-Canada Highway
IV. The "Queensway" — Ottawa
V. Receipts
VI. Comparison of Average Unit Prices Paid on Contracts
VII. Burlington Bay Skyway
VIII. Garden City Skyway

Total Expenditures

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at $280,476,989. The following is a comparison of total expenditure with previous years:

1959	$227,547,235	1962	$243,238,200
1960	248,514,195	1963	251,152,745
1961	237,994,017	1964	280,476,989

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement III in the amount of $208,943,108
with funds recovered or recoverable of 110,091,280

and a net cost to the Department of ..... $ 98,851,828

Recoverable Expenditures

Within the fiscal year, the Department recovered $14,142,671, made up as follows:

Trans-Canada Highway		$ 2,990,783
Ottawa Queensway — Dominion Government	$1,211,642	
— City of Ottawa	600,000	1,811,642
Railway Bridges		1,884,261
Total of items detailed in Statement II		$ 6,686,686
Dominion-Provincial Resources Roads		498,944
Ontario Department of Mines		819,508
Sundrey items credited to expenditure or to revenue		6,137,533
		$14,142,671

Pre-qualification of Contractors

Of the 261 capital contracts awarded during the year, 120 or 46.0 per cent required the pre-qualification of contractors. An average of 7.5 bids were received on pre-qualified contracts as compared with 5.0 bids on unqualified contracts.

Indices of Tender Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted showing:

Index of Tender Prices paid on Road Contracts (Charts I–II) and

Index of Tender and Material Prices (Chart III)

It is evident from these indices that unit prices on contracts awarded increased substantially and that prices paid for road material increased slightly during the year.

Burlington Bay Skyway

The accompanying statement indicates a continued upward trend in revenue and in the number of vehicles using the Burlington Bay Skyway.

Garden City Skyway

The Garden City Skyway was officially opened on October 18, 1963, and toll charges, which are the same as for the Burlington Bay Skyway, became effective on that date. A manual collection system, with several efficient control devices, is in operation. Statement VIII shows the operating results of the Skyway for the latter part of our fiscal year.

STATEMENT I

ORDINARY EXPENDITURE

For the Fiscal Years Ending March 31, 1964 and March 31, 1963

	Year Ending March 31, 1964		Year Ending March 31, 1963	
Maintenance of King's Highways and Secondary Highways —				
Winter Maintenance —				
Contract and day labour	$15,240,503		$15,656,387	
Equipment operating costs due to standby (60 per cent)	357,286		215,192	
Summer Maintenance —				
Patrol costs	10,196,177		9,964,534	
Gravel crushing, contract and day labour	1,017,821		810,847	
Prime contract and day labour	624,264		552,817	
Hot-mix patching, contract	975,031		833,834	
Surface treatment, contract and day labour	411,238		485,748	
Mulch, day labour	74,515		39,791	
Major bridge repairs	245,627		255,401	
Salt shed construction	40,997		.....	
Equipment operating costs due to standby (40 per cent)	238,190		143,461	
Operation of ferries	340,813		347,206	
Flood and other emergencies	12,196		10,183	
District office overheads, including engineering, warehouse and municipal	7,543,527		7,242,096	
Net cost of equipment rented to municipalities	.....		.....	
Expenditures recovered but credited to revenue	221,547		208,976	
Increase in inventories	119,279		220,902	
		$37,659,011		$36,987,375

STATEMENT I (Cont'd)

Repaving of present roads		979,436		1,417,624
Maintenance of development roads		100,627		110,366
Maintenance of roads in unincorporated townships in Northern Ontario		668,366		674,365
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)		$39,407,440		$39,189,730
General Operating Expenditures —				
Purchase of new trucks, tractors, graders, ploughs and other road equipment	$ 1,413,707		$ 2,412,774	
Printing and stationery	925,723		979,287	
Office furniture and equipment	264,635		333,762	
Workmen's compensation	280,118		279,790	
Insurance and claims	229,502		238,148	
Unemployment insurance stamps	212,488		248,106	
Maintenance of buildings and area office rentals	216,255		389,978	
Bus rentals	26,792		67,547	
Teletype rentals	96,702		92,460	
Staff training	73,149		103,411	
Recoverable expenditures (net)	(1,603)		20,075	
Central stores, increase in stock	18,167		66,848	
		$ 3,755,635		$ 5,232,186
Head Office —				
General administrative and operating staff salaries	$ 4,128,071		$ 3,989,547	
Travelling expenses	278,013		281,320	
Electronic section salaries and equipment rentals	133,446		154,404	
Sundry	488,773		518,078	
		$ 5,028,303		$ 4,943,349
Road publicity, etc.		149,042		136,765
Burlington Bay Skyway, toll collection costs		203,036		181,919
Garden City Skyway, toll collection costs		66,820		.....
Municipal Subsidies —				
County roads	$ 6,296,292		$ 5,785,610	
Township roads	14,885,765		12,663,942	
Cities, towns and villages	11,787,400		10,650,747	
		$32,969,457		$29,100,299
TOTAL ORDINARY EXPENDITURES		$81,579,733		$78,784,248

PER PUBLIC ACCOUNTS

Total Ordinary Expenditures per Public Accounts	$81,579,733	$78,784,248

STATEMENT II

CAPITAL PAYMENTS

For the Fiscal Years Ending March 31, 1964 and March 31, 1963

	YEAR ENDING MARCH 31, 1964	YEAR ENDING MARCH 31, 1963
Construction of King's Highways and Secondary Highways —		
Payments to contractors	$68,985,522	$ 61,429,223

STATEMENT II (Cont'd)

Materials and sundry contract expenditures	$35,203,836		$ 28,109,933	
Engineering	10,642,779		10,534,938	
		$114,832,137		$100,074,094
Construction of development roads		11,008,126		7,607,178
Construction of roads in unincorporated townships in Northern Ontario		708,473		453,852
Expenditures allocated to the above roads —				
Property purchases	$ 7,999,046		$ 8,726,284	
Land surveys	1,825,292		1,847,359	
Planning and design	4,622,870		4,534,305	
		$ 14,447,208		$ 15,107,948
Total (see Appendices 1 and 2 for distribution of above expenditures by counties, roads, etc.)		$140,995,944		$123,243,072
Expenditures of Head Office branches unallocated and not included above:				
Property	$ 1,564,226		$ 1,566,711	
Land surveys	1,098,063		1,065,874	
Planning and design	3,764,328		3,449,695	
Construction of new buildings	270,317		1,054,083	
Soils testing and research	2,559,636		2,551,124	
Engineering audit	709,038		688,692	
Increase (decrease) in Bailey bridge and steel inventories	(232,626)		(36,736)	
Recoverable expenditures (net)	(776,894)		(1,025,062)	
Electronic Section, salaries and equipment rentals	530,292		427,872	
Sundry	29,438		21,227	
		$ 9,515,818		$ 9,763,480
Municipal Subsidies:				
County roads	$13,487,746		$ 13,240,269	
Township roads	15,037,696		13,418,678	
Cities, towns and villages	26,546,738		20,471,416	
		$ 55,072,180		$ 47,130,363
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION		$205,583,942		$180,136,915
Less Recoveries:				
Trans-Canada Highway	$ 2,990,783		$ 3,958,997	
Ottawa Queensway —				
Dominion Government	1,211,642		951,729	
City of Ottawa	600,000		900,000	
Railway Bridges	1,884,261		1,457,692	
Niagara Falls Bridge Commission			500,000	
		$ 6,686,686		$ 7,768,418
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS		$198,897,256		$172,368,497

EXPENDITURE SUMMARY

Ordinary expenditure	$ 81,579,733		$ 78,784,248	
Capital payments, net	198,897,256		172,368,497	
		$280,476,989		$251,152,745
TOTALS		$280,476,989		$251,152,745

STATEMENT III
TRANS-CANADA HIGHWAYS

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Dominion Government on April 24, 1950.

	Refundable by Dominion Government	Expended by Department
Refunded by Dominion Government on account of work performed prior to April 24, 1950	$ 1,569,640	
Year ending March 31, 1951	2,749,329	7,043,559
" " " 1952	3,453,866	8,242,801
" " " 1953	4,103,753	11,746,130
" " " 1954	2,486,860	9,686,452
" " " 1955	6,274,487	5,675,343
" " " 1956	3,365,959	9,602,299
" " " 1957	4,855,053	13,996,280
" " " 1958	12,381,361	20,683,306
" " " 1959	15,803,757	27,995,777
" " " 1960	17,662,423	28,412,552
" " " 1961	16,500,840	24,786,757
" " " 1962	11,623,549	16,168,477
" " " 1963	3,958,997	8,164,528
" " " 1964	2,990,783	6,784,073
Expenditure by Department for property and other non-recoverable expenditures		9,954,774
Total to March 31, 1964	$109,780,657	$208,943,108
Further claims to be submitted based on expenditures to March 31, 1964 — Claim No. 129	$ 234,623	
Claim No. 130	76,000	
Total Refunds by Dominion Government		$110,091,280
Net Estimated Cost to March 31, 1964		$ 98,851,828

STATEMENT IV
THE QUEENSWAY—OTTAWA

The following statement sets out expenditure and amounts recoverable on the "Queensway," Ottawa, since the signing of the agreement with the Dominion Government, the Federal District Commission and the City of Ottawa on March 19, 1957.

Expended by Department:		
Year ending March 31, 1958	$ 563,956	
" " " 1959	1,720,076	
" " " 1960	3,860,475	
" " " 1961	5,723,245	
" " " 1962	3,889,962	
" " " 1963	3,778,739	
" " " 1964	5,215,154	
		$24,751,607
Recovered from Dominion Government:		
Year ending March 31, 1958	$ 204,500	
" " " 1959	109,221	
" " " 1960	773,681	
" " " 1961	1,367,729	
" " " 1962	1,380,118	
" " " 1963	951,729	
" " " 1964	1,211,642	
	$5,998,620	

STATEMENT IV (Cont'd)

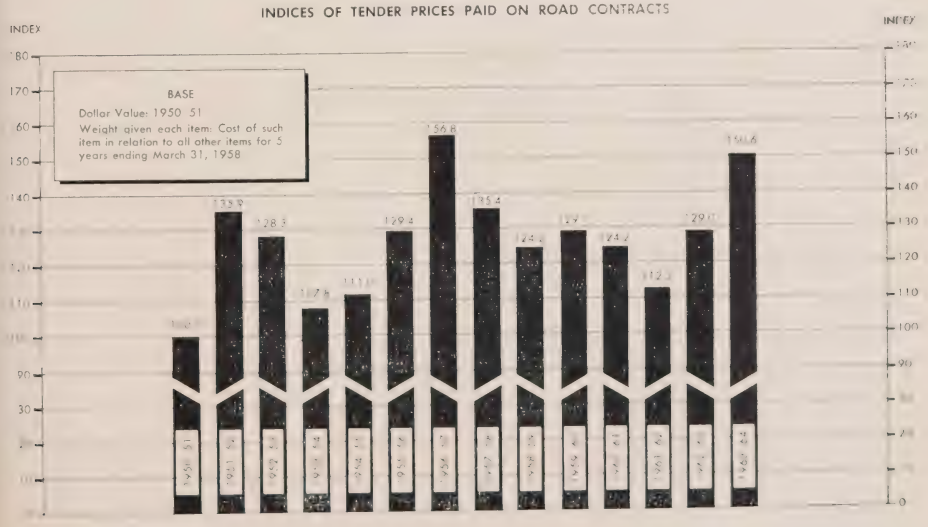
Further amounts to be recovered based on expenditure to March 31, 1964		215,060	
		$6,213,680	
Recovered from the City of Ottawa		2,400,000	
AMOUNTS TO BE RECOVERED FROM:			
The City of Ottawa	$2,544,728		
Dominion Government and the City of Ottawa — in process	1,217,395	3,762,123	
TOTAL RECOVERIES			$12,375,803
NET ESTIMATED COST TO MARCH 31, 1964			$12,375,804

STATEMENT V
STATEMENT OF RECEIPTS
For the Fiscal Years Ending March 31, 1964 and March 31, 1963

	YEARS ENDING MARCH 31, 1964	MARCH 31, 1963
Sales of land and buildings	$1,223,722	$1,399,092
Property rentals	267,384	267,163
Sales of services and materials	456,065	375,627
Permits — sign and housemoving	74,767	56,236
Gas pump revenue	28,725	31,185
Gas line franchises	7,840	12,640
Burlington Bay Skyway	857,582	785,912
Garden City Skyway	183,389	.....
Miscellaneous	275,935	46,338
TOTAL RECEIPTS	$3,375,409	$2,974,193
Distribution:		
Ordinary revenue	$1,938,398	$1,574,429
Capital receipts	1,437,011	1,399,764
	$3,375,409	$2,974,193

CHART 1

INDICES OF TENDER PRICES PAID ON ROAD CONTRACTS



STATEMENT VI
DEPARTMENT OF HIGHWAYS
COMPARISON OF AVERAGE UNIT PRICES PAID ON CONTRACTS
(Items used for price index purposes)
For period April 1, 1950 to March 31, 1964

Fiscal Year	Clearing, Acre	Grubbing, Acre	Earth Excavation, Cu. Yd.	Rock Excavation, Cu. Yd.	Granular "A", Ton	Granular "B", Ton	5/8" Crushed Gravel "A", Ton	5/8" Crushed Gravel "B", Ton	Bituminous Hot Mix Top Course, Ton	Bituminous Hot Mix Base Course, Ton	Sand Cushion, Ton	Earth Compaction, Cu. Yd.	Compaction Equipment, Hour	Water for Compaction, M. Gal.	Concrete in Culverts, Cu. Yd.	Concrete in Structures, Cu. Yd.	Structural Steel Fabrication, Ton	Structural Steel Erection, Ton
	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.80	3.72	.57	.026	...	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.96	4.86	.68	.032	.....	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.66	4.88	.79	.029	.....	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.68	3.69	.60	.027	.....	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	3.20	3.36	.70	.027	.....	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.80	3.80	.63	.035	.....	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	5.38	4.37	.97	.045	.....	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.99	4.00	.79	.044	.....	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.68	3.52	.71	.042	...	4.56	26.79	31.98	237.93	59.50
1959/60	157.32	156.31	.41	2.00	1.44	.82	1.17	1.38	5.13	3.91	.79	...	6.29	4.37	27.90	37.77	246.28	63.69
1960/61	157.89	161.49	.43	1.81	1.26	.71	1.55	1.37	4.68	4.11	.70	...	6.49	3.81	26.33	32.66	277.75	75.32
1961/62	156.25	146.74	.36	1.76	1.29	.69	1.08	1.23	4.12	2.99	.69	...	8.05	3.27	22.60	29.50	233.71	39.78
1962/63	194.30	153.68	.45	1.84	1.33	.83	1.22	1.35	5.04	4.01	.71	.....	9.28	3.31	27.58	31.34	267.18	58.48
1963/64	260.53	195.57	.57	2.21	1.59	.98	1.43	1.47	5.71	4.90	.74	...	9.28	3.84	30.97	31.85	259.06	50.86

CHART II
TENDER PRICE INDICES

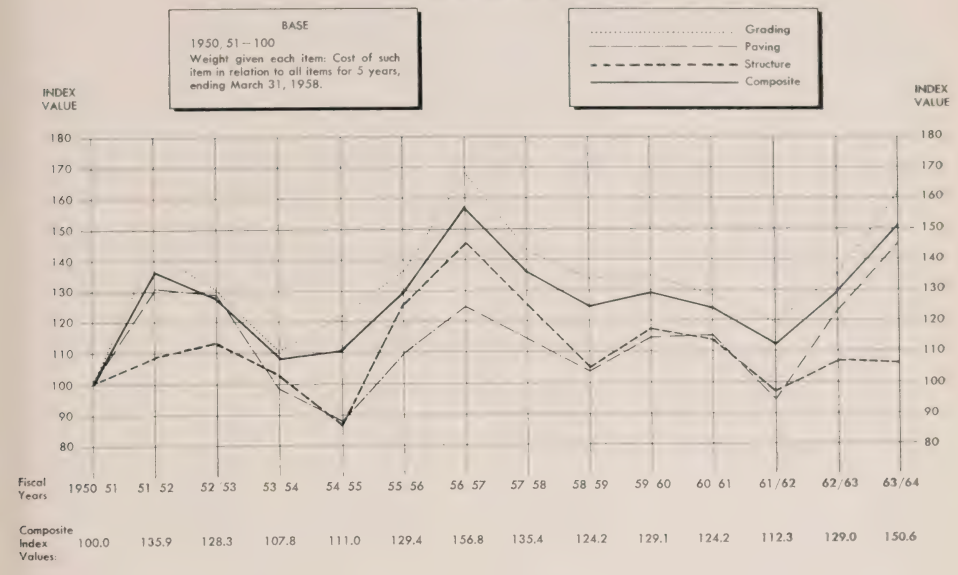
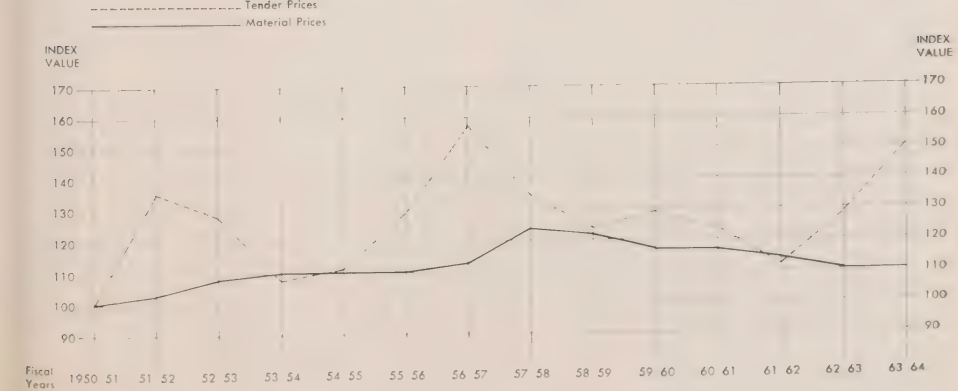


CHART III
COMPARISON OF TENDER AND MATERIAL PRICE INDICES



STATEMENT VII

BURLINGTON BAY SKYWAY

COMPARATIVE STATEMENT OF TOLL COLLECTION REVENUES AND EXPENDITURES

For the Years Ending March 31, 1964 and March 31, 1963

	Year Ending March 31, 1964	Year Ending March 31, 1963	Increase (Decrease)	Percentage Increase
Revenues:				
Toll Revenue Earned:				
Class I vehicles	$ 721,703	$ 674,732	$ 46,971	6.96
Class II vehicles	51,080	44,117	6,963	15.78
Class III vehicles	57,269	47,947	9,322	19.44
Total Revenue Earned	$ 830,052	$ 766,796	$ 63,256	8.25
Plus — Tickets and tokens sold but not presented	21,134	14,937	6,197	41.49
	$ 851,186	$ 781,733	$ 69,453	8.88
Add Premium U.S. Funds	6,396	4,179	2,217	53.05
Total Revenue	$ 857,582	$ 785,912	$ 71,670	9.12
Expenditures:				
Toll operating staff salaries	$ 144,547	$ 132,453		
Travelling expenses	3,671	2,644		
Office expenses and stationery	15,258	7,150		
Uniforms and raincoats	.....	.....		
Light, heat, water, telephone, etc.	6,091	6,817		
Maintenance of building	2,561	3,330		
Maintenance of equipment	6,793	5,360		
Rental of equipment	24,116	24,165		
	$ 203,037	$ 181,919	21,118	11.61
Excess of Revenues over Expenditures	$ 654,545	$ 603,993	$ 50,552	8.37
Traffic:				
Class I vehicles	8,092,793	7,376,523	716,270	9.71
Class II vehicles	229,033	195,244	33,789	17.31
Class III vehicles	163,017	134,693	28,324	21.03
Total	8,484,843	7,706,460	778,383	10.10

Toll Rates	Cash	Tickets
Class I vehicles (passenger cars and trucks under one ton capacity)	15c.	5c.
Class II vehicles (passenger cars with trailers and trucks with two axles and more than one ton capacity)	25c.	16⅔c.
Class III vehicles (trucks with three axles or more and public vehicles)	45c.	30c.

STATEMENT VIII

GARDEN CITY SKYWAY

TOLL COLLECTION REVENUE AND EXPENDITURES

October 18, 1963 to March 31, 1964

REVENUE:	
Toll Revenue Earned:	
Class I vehicles	$ 147,863
Class II vehicles	6,097
Class III vehicles	17,663
Total Revenue Earned	$ 171,623
Plus — Tickets and tokens sold but not presented	8,864
	$ 180,487
Add Premium U.S. Funds	2,902
Total Revenue	$ 183,389
EXPENDITURES:	
Total operating staff salaries	$ 50,048
Travelling expenses	6,854
Office expenses and stationery	1,055
Light, heat, water, telephone, etc.	5,922
Maintenance of building	794
Maintenance of equipment	2,147
	$ 66,820
Excess of Revenue over Expenditure	$ 116,569
TRAFFIC:	
Class I vehicles	1,546,709
Class II vehicles	27,631
Class III vehicles	49,587
Total	1,623,927

OPERATIONS BRANCH

J. B. WILKES, P.Eng., *Manager of Operations*

CONSTRUCTION
H. A. Tregaskes, P.Eng.
Construction Engineer

Regional and District Engineers

MAINTENANCE
E. J. Orr, P.Eng.
Maintenance Engineer

CONSTRUCTION

H. A. TREGASKES, P.Eng.—Construction Engineer

Construction was favoured in the year 1963-64 with very fine weather which continued unusually late in the fall, and by the end of the working season a very large volume of work had been carried out. On the Department's most important project, Highway 401, there were 99 miles opened to travel in three separate areas of the province. A fine start was made in the very complicated and difficult work of widening the Toronto By-pass section of Highway 401 to twelve lanes. New dual highways opened during the year included Highways 126 and 405, the Freeport Diversion on Highway 8 and a six mile section of Highway 403 near Hamilton. The Garden City Skyway was completed and opened to travel, eliminating a very serious traffic bottleneck on the Queen Elizabeth Way. Good progress was made on the Ottawa Queensway, with Stage III nearly completed, and work on Stage IV well under way by year's end.

In northern Ontario the Tri-Town By-pass was opened to travel, and on the Atikokan–Fort Frances section of Highway 11 there were 63 miles of continuous grading under way in the fall. Work progressed favourably on several sections of the Trans-Canada Highway in northern Ontario.

In addition to the large amount of work performed on the Department's major projects a great deal of reconstruction was carried out on main and secondary highways throughout the province. Special emphasis was placed on the mining and access program in northern Ontario.

Some of the most important work carried out in 1963-64 was as follows:

SOUTHWESTERN AREA—Chatham, London, Stratford, Owen Sound Districts

Work on paving, bridges and interchanges continued on Highway 401 in this portion of the province. Concrete paving was completed in the north lane from Tilbury By-pass to Highway 4, a distance of 70.90 miles (32 miles in the Chatham District and 38.9 miles in the London District), thus providing a through east-west route between Toronto, London and Windsor. Resurfacing of 401 for approximately 13.5 miles westerly from Highway 19 was commenced in the fall.

On Highway 3, reconstruction and asphalt paving from Blenheim westerly for 10.2 miles was finished this year. Reconstruction was also carried out from Courtland to Tillsonburg, a distance of four miles, and good progress was made in the work west of Highway 4 over a distance of 6.4 miles. In the rebuilding of Highway 4, north of Calamity Corners and south of Exeter, considerable work was carried out by the end of the construction year. Grading, drainage, granular base and hot-mix paving was completed from 4.13 miles west of Durham to Allan Park.

Hot-mix paving was completed on Highway 6 from Arthur south for 5.25 miles with much improvement to alignment and riding surface. Paving from Orchard to Durham, Ferndale to Miller Lake, and from the junction of Highway 21 westerly for 5.91 miles.

Considerable new work was commenced in the vicinity of Sarnia on Highways 402 and 7, which when brought to completion will considerably relieve traffic congestion in the area.

Grading, drainage, granular base and hot-mix paving on Highway 8 from the north end of Highway 401 interchange at Preston north limits northerly for 1.31 miles along with interchange improvements and curve revisions were finished. On the Freeport Diversion, a distance of 2.56 miles, grading, drainage, granular base and hot-mix paving including three service roads and extensive sewer, curb and gutter work were completed. This new road provides a controlled-access divided highway into the City of Kitchener.

Grading, drainage and granular base, also three concrete structures, were completed on Highway 9 from Mildmay to Walkerton. Grading, drainage, granular base and hot-mix paving were carried out at Kincardine. This work also included curb and gutter and storm sewer system. This project greatly improved the intersection of Highways 9 and 21.

On Highway 18 from Leamington to Kingsville major reconstruction and asphalt paving was carried out. The structure over Wigle Creek was finished.

From the junction of Highway 7 southerly to Unionville on Highway 19, grading, drainage, granular base and hot-mix paving was finished, with great improvement to the intersection of Highways 7 and 19.

Reconstruction and paving was also carried out on Highway 21 from Grand Bend south to junction of Highway 82. Structure over Aux Sauble River was finished.

On Highway 24 reconstruction work commenced on a new alignment north of Simcoe over a distance of 8.5 miles.

The reconstruction of Highway 80 from Courtright easterly to Highway 79 over a distance of 31 miles was finished this year.

Work started on a new structure at Grand Bend together with reconstruction of Highways 21 and 81 in the village.

On Highway 90 grading, drainage, granular base and hot-mix paving from Barrie west 6.3 miles including the superelevation of curves on Highway 400 approximately two miles north of Barrie were finished.

On Highway 126 the concrete paving was finished, thus providing the City of London with a second access to Highway 401. Two structures were completed on this controlled-access highway.

Other structures completed in this south-western area included, at the easterly end of the Tillbury By-pass, a 333-ft.-long structure, built to carry Highway 2 traffic over Highway 401. A structure on Highway 98 over Puce River, and the Zetland Bridge and approaches over the Maitland River on Highway 86.

CENTRAL AREA—Toronto and Port Hope Districts

During the past year the first big step towards the reconstruction of the Toronto By-pass sections of Highway 401 was made. The work involved a great

number of structures, large retaining walls, grading, culverts, sewers and concrete and bituminous paving. This year also marked the completion of two major projects in the Niagara peninsula, Highway 405, providing a direct link between the Queen Elizabeth Way at Queenston and the New York State Throughway at Lewiston, and the Garden City Skyway over the Welland Canal, eliminating a very serious traffic bottleneck. In addition a section of Highway 403 approximately 6 miles in length from the Freeman high-speed interchange to Longwood Road was officially opened in the fall, while work on Highway 403 continued beyond that location to a point about ¾ of a mile west of Aberdeen Ave. in Hamilton. Also on the Brantford By-pass section of Highway 403 considerable work was accomplished on the structures and grading covering approximately four miles. Good progress was made on the dual Highway 406 from St. Catharines southerly which will link the City of Welland to the Queen Elizabeth Way. By the end of the year a good deal of work had been carried out on the reconstruction of the Niagara St. interchange on the Queen Elizabeth Way, while at Vineland Road to Jordan Road on the Queen Elizabeth Way a start was made on new interchanges and service roads, which will improve traffic conditions in that area.

The new controlled-access road to Toronto International Airport and the widening of Dixon Rd., which were opened to traffic in the late fall offered many major construction problems.

On Highway 2 a new by-pass around the Village of Dunbarton was built in 1963. This contract involved a good deal of co-operation between not only the C.N.R. and the Department, but also the many utility companies in the area. Also on Highway 2, resurfacing and pavement widening were completed through the Village of Newcastle. A short section of Highway 6 was rebuilt to four-lane standards, providing a new connection for Highway 6 and 403 at Wolfe Island. Grading and paving were virtually completed on Highway 6 from Hagersville to Jarvis and relocated Highway 8 between Queen Elizabeth Way and St. David's was finished.

Grading and paving of Highway 7A from Port Perry to the junction of Highway 35 and of 4.6 miles of Highway 12 from the village of Blackwater northerly through the Village of Sunderland to the junction of Highway 7 west of Lindsay, were finished during the year.

Work started the previous year in Markham, Bradford, Bolton, Port Credit and Cooksville was completed.

Highway 20 was improved with the reconstruction from Highway 2 to Woodward Ave. in Hamilton, and from Stoney Creek traffic circle to King Street. Dual Highway 102 from Main St. in Hamilton to York Street in Dundas was graded and repaved in the four lanes.

Seven miles of grading and fourteen miles of surface treatment were completed in the Six Nations Indian Reserve under a joint project with the Federal Government.

Grading and paving were completed on Highway 33 from Hillier to Consecon, together with the structure over the Consecon River and the reconstruction of 4.5 miles of old Highway 33.

One Scenic project completed this year on Highway 35 was a new High-Level 600-ft. structure over the Trent Canal at Rosedale.

EASTERN AREA—Kingston, Ottawa and Bancroft Districts

Work on Highway 401 proceeded very well and with the completion of nine miles of concrete pavement west of Napanee and 18 miles westerly from Cornwall by the end of the year, continuous travel was provided between Toronto and Lancaster, 8 miles west of the Quebec boundary. Good progress was made on other contracts on Highway 401 in grading and structure work, east of Lancaster and between Highway 16 and the Iroquois County Road. In addition, a fine start was realized in the three concrete paving contracts covering 30 miles in the north lane of Highway 401 between Highway 38 and west of Marysville sideroad. During the year 26 bridges were under construction of which 16 were finished by the end of the season.

On the Ottawa Queensway, concrete paving was completed from Carling Ave. to Bronson Ave., and only 4,400 ft. of concrete paving are required to complete Stage III to O'Connor St.

On Stage IV of this important project, grading and bridges were finished from O'Connor St. to the Rideau Canal and the structures over the Rideau Canal and Main St. were commenced late in the year. Considerable work was carried out on a major contract on Highway 2 from Marysville to the location of the new bridge over the Bay of Quinte. The reconstruction of Highway 7 from the Madoc By-pass to Actinolite proceeded favourably. In the rebuilding of Highway 17, final surface paving between Meath and Pembroke, and from Kennedy's Corners to Antrim was finished, as was the reconstruction at Carp. Work on the 10-mile contract on relocated Highway 17 from Carp to Antrim commenced in the fall. The resurfacing of Highways 7 and 15 from Carleton Place to Ashton Station was carried out. Highway 29 from Carleton Place to Almonte was rebuilt during the 1963 season, including binder course paving. Reconstruction of Highway 33 through the Village of Bath was performed under a connecting link agreement.

Grading on the Highway 41 from Eaganville to Perrault was finished during 1963 as were the grading and paving on Highway 62 north of Bannockburn and in the Village of Barry's Bay. Also on Highway 62 grading of five miles West of Pembroke was brought to completion.

On Highway 42 good progress was made on grading work between Forthton and Athens.

Regrading of Highway 60 from Wilno to Killaloe was virtually finished before winter.

On Development Road 588 binder course paving was carried out southerly from Ivanhoe, and grading commenced southerly from this contract to connect with the Foxboro By-pass and the section of Highway 14 between Foxboro and Highway 401, on which reconstruction was nearly finished by late fall.

NORTHERN AREA—Huntsville, Sault Ste. Marie, Sudbury, North Bay and New Liskeard Districts

On Highways 35 and 60 from the junction of Highway 11B easterly, the grading and hot-mix paving of 7.5 miles were completed, while fine progress in grading was made on the next 5.6 miles to the east of Dwight. Three new structures were built on the latter contract. Also on Highway 60 in Algonquin Park the last seven miles of paving to the East district boundary were completed. A new structure and approaches was completed on Highway 12 west of the

Village of Haliburton. The Milford Bay By-pass on Highway 118 was paved and opened to traffic. This was part of a six-mile contract, and it now completes the reconstruction of Highway 118 from Bracebridge to the west of the Village of Milford Bay.

A new high-level structure over the Atherley Narrows on Highway 12 at Orillia, replacing the existing swing bridge was started. This bridge will eliminate severe traffic congestion caused by the heavy water traffic in the Trent Canal System between Lake Simcoe and Lake Couchiching.

Important reconstruction of Highway 118 from North Bay southerly, including widening to four lanes, was finished by the year's end, as were the grading contracts on Highways 17 and 64 from Point Alexander westerly and Verner southerly respectively. The grading work on Highway 17 from Rutherglen westerly progressed satisfactorily. The Tri-Town By-pass was opened to traffic in the fall of 1963, with the completion of structures and hot-mix paving work, enabling traffic to by-pass a lengthy built-up section of highway through Cobalt, Haileybury and New Liskeard. Top-course pavement was placed on Highway 11 from Englehart to the South Wye.

On Highway 66 grading was performed from the Quebec boundary, thus completing the reconstruction of Highway 66 between Highway 11 and Quebec.

Two new structures were built on Highway 101 east of Matheson. On Secondary Highway 588 westerly from Haileybury, reconstruction including hot-mix paving was completed in 1963. At the eastern side of Sudbury, widening of Highway 17 to four lanes was commenced, and a major sewer contract on Bancroft Drive was also under way late in the year. Heavy grading was performed on Secondary Highway 544 south from Cartier on an 8.2-mile contract and on Highway 68 for 4.3 miles south of La Cloche Channel.

Grading was also carried out on 7.6 miles of Secondary Highway 639 from Jimchrist Lake to Secondary Highway 546. Work performed on Highway 17 north of Sault Ste. Marie included the completion of hot-mix paving from Havilland Bay to Chippewa Falls and the grading and hot-mix paving from Chippewa Falls westerly for 9.2 miles. On this latter section the Carp River Bridge was built during the 1963 season.

On Highway 101 heavy rock grading was completed for eight miles east from Wawa and a further seven miles of grading easterly, with two structures, were under way in the fall. West of Chapleau on Highway 101 good progress was made on a 10.5 mile grading contract. Clearing was carried out on Highway 101 between Chapleau and Wawa over a distance of 19 miles.

The Forestry Access Road from Missinabie southerly covering 7.7 miles was finished in the fall.

NORTHWESTERN AREA—Cochrane, Fort William and Kenora Districts

Grading, granular base and a new structure on Highway 11 from Val Albert easterly 5.46 miles were completed in 1963.

Grading, drainage, granular base and binder course paving for 5.29 miles at Ansonville, Iroquois Falls and Montrock were finished by late fall. Paving was carried out on Highway 11, Porquis Junction northerly for 9.3 miles and on Highway 67 from Porquis Junction to Ansonville. The paving contract on High-

way 11 contained approximately six miles of asbestos impregnated asphalt containing various percentages of asbestos. The Mattawishkwia River Bridge at Hearst on Secondary Highway 583 was completed. Paving and trimming of the new access to the new International Bridge over the Pigeon River; customs and immigration facilities were completed and the new crossing was opened to traffic.

Grading and binder-course paving were complete between Fort William and Kakabeka Falls (except the C.N.R. overhead and approaches). Grading was finished on the 11-mile section of Highway 17 from English River east.

West of Atikokan on Highway 11, grading was completed on the section from mile 10 to mile 24.5 west. This 14.5-mile job included a very extensive section of rock work.

Good progress was made in the final 10 miles of grading on Highway 11 in the Fort William District, and by year's end most of the extensive rock work was done. In the Kenora District continuous grading work on Highway 11 west from the district boundary covered 34 miles approximately, through difficult country.

Work commenced in the fall on a granular base and hot-mix paving contract covering about 14 miles, starting five miles east of Fort Frances. The C.N.R. overhead and the Windy Point structures east of the Rainy Lake Causeway were finished in 1963, while work on the large Bear Passage bridge proceeded satisfactorily. On Highway 11 at Pinewood, the Pinewood River bridge, with approaches, was completed. On Highway 17, the 18 miles of grading, east and west of Dryden were brought to completion, and covered with binder course paving. Reconstruction of Highway 17 in the Town of Dryden commenced. From Longbow Corners westerly on Highway 17 for 5.7 miles, grading was finished and on this section of highway a binder course pavement laid. West of Keewatin on Highway 17 good progress was made on a very heavy rock grading contract covering approximately 10 miles.

On Highway 105, grading and granular base were completed on 30 miles from the Trout Lake River bridge to 12 miles south of Ear Falls.

During 1963 a very large amount of work was done on Resources and Access Roads.

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS COMPLETED DURING FISCAL YEAR 1963-64

Hwy. No.	New 4-Lane Roads	Miles
6	North of Hwy. 403	0.6
7	Langstaff to Old Hwy. 7	3.4
8	Freeport Diversion	2.6
11B	Between Nipissing Jct. and North Bay	3.5
126	Hwy. 401 to Hamilton Road	3.6
401	Aultsville Sideroad to Toll Gate Road at Cornwall	17.8
403	Q.E.W. to Longwood Rd.	6.2
405	Q.E.W. to International Bridge at Queenston	5.2
	C.A.H. to International Airport, Hwy. 401 to Urson Rd.	1.6
	TOTAL	44.5

Hwy. No.	New 2-Lane Roads	Miles
2	Dunbarton By-pass	1.1
8	Old Hwy. 8 at St. David's to Q.E.W.	2.5
11	Tri-Town By-pass, north and south of New Liskeard	11.8
24	North of Simcoe	8.5

Hwy No.	New 2-Lane Roads	Miles
33	Between Hillier and Consecon	4.4
101	Wawa easterly	7.9
118	Milford Bay By-pass	2.2
401	Hwy. 4 to Hwy. 2 east of Tilbury, north lane	71.2
401	West of Marysville sideroad to west of Napanee, south lane	10.0
	TOTAL	119.6

NEW BRIDGES COMPLETED 1963-64

During the fiscal year 1963-64, the number of new bridges completed was 103

MAINTENANCE

E. J. Orr, P.Eng.—Maintenance Engineer

Department's Asphalt Plant

During 1963 the asphalt plant organization continued the paving of Highway 105.

Highway 105 was reconstructed by contract from the end of the pavement southerly to Ear Falls. These grading and granular base contracts were completed in time for the Department's asphalt plant crew to continue paving during the 1963 season. The asphalt plant, operating from the Snake Falls pit located 25 miles south of Red Lake, produced 70,066 tons of asphalt hot-mix. This tonnage represents 34 miles of base course laid from Stone River southerly to Ear Falls bridge and 27 miles of top course pavement laid from Stone River southerly to within seven miles of Ear Falls. Highway 105 is now paved from Red Lake south to Ear Falls, some 45 miles.

In addition to the above, the Department's crusher produced 71,930 tons of granular "A" which was stockpiled in Snake Falls pit.

Department Crushing Plant

The Department crusher from Fort William District produced 72,274 tons of crushed gravel; 18,000 tons in Kenora District and the balance at various locations in Fort William District.

Mulch Pavement

Mulch pavement mixed and laid by Department forces totalled 66.95 miles in the following Districts:

Bancroft	0.25 miles
Huntsville	22.20 miles
North Bay	12.40 miles
New Liskeard	30.80 miles
Fort William	1.30 miles

Zone Painting

Our 14 single and seven dual zone striping machines operating throughout the summer painted 10,822 miles of King's Highways and Secondary Highways, plus 110 miles of County Roads.

Some test work was done in Owen Sound District using the bead overlay method of zone striping, as opposed to our usual pre-mix method. Approximately

190 miles of King's Highways were painted using the bead overlay method and approximately 37 miles were painted using 50 50 mixture of pre-mix and overlay. The resulting immediate reflectance plus better reflectance at night, particularly when the pavement is wet, has indicated that further paint trucks will be converted to enable them to use the bead overlay method during the summer of 1964.

Thermoplastic traffic paints were also tested on centre line markings, on crosswalks and stop blocks. These applications have met with varied success and are still being evaluated in the field.

Signs

During the year district forces erected or replaced 59,436 signs of various types and sizes ranging from fingerboards, curve and stop signs to the large freeway and overhead metal signs.

Weigh Scales

Three new weigh scales were installed in 1963 at the following locations:

DISTRICT 20 — Highway 17 west limits of Keewatin
30-ton, 12′ x 10′ axle load to replace 30-ton, 40′ x 10′ platform scale at Longbow Corners.

— Highway 17 at Dryden
30-ton, 12′ x 10′ axle load to replace 30-ton, 40′ x 10′ platform scale at Dinorwic.

— Highway 105 at junction of Highway 125
30-ton, 12′ x 10′ axle load.

Pavement Maintenance

The "Pavement De-Slicker" worked throughout the summer, burning off excess asphalt from sections of highway which had become flushed and consequently slippery. The extent of pavement requiring this treatment was less than in 1962, and the one machine completed the 17 miles required. One short section in Sault Ste. Marie District was burned during the cold weather of last winter with fair results.

Winter Maintenance

The winter of 1963-64 was relatively mild. Although routine winter maintenance operations were carried out. Snowfall was below average across the province.

The Maintenance Section, in co-operation with the Materials and Research Division and the districts, carried out a program of testing the relative de-icing properties of straight salt and a mixture of 25 per cent calcium chloride and 75 per cent salt by weight. These tests were conducted in Ottawa, Huntsville and New Liskeard Districts. Although the relatively mild winter did not provide the conditions we had hoped for, the results indicated no particular advantage in using the mixture.

The Winter Works Program, although slightly smaller than in 1962, enabled the districts to carry out successfully such projects as clearing, grubbing, rock excavation, granular base, fencing, bridge repairs and reconstruction. Under

this program, the districts also carried out work on the development or improvement of 33 picnic park sites.

Inspection and Maintenance of Bridges

In addition to the annual inspection approximately half of all structures were given a special detailed inspection resulting in the discovery and correction of various deficiencies. This work covered underwater grouting repairs to the Grand River Bridge at Paris on Highway 2. The Muskoka River Bridge at Bala on Highway 69, and the Seguin River Bridge on Highway 69.

Excessive spring run-off resulted in severe erosion to a key culvert on Highway 401 at Horners Creek in London District. This was repaired by the London Region bridge crew who also concreted a prepared base to control future scour.

The Reed Narrows bridge on Highway 71 in Kenora District was reinforced to carry licensed loading. Improvements included winter work to reduce the approaches.

Structures at Rydal Bank on Secondary Highway 561, over the Thessalon River on Secondary Highway 638, at Moore Falls on Highway 35, were reinforced with Bailey bridging.

Gabions, or stone-filled wire baskets, were placed at various bridges, including the Bayfield bridge on Highway 21 to prevent bank erosion; this was done as winter work with unskilled labour. Present treatment is proving successful.

Blasting damages at Bells Falls on Secondary Highway 554 required placement of a 12-foot Bailey bridge pending a permanent structure. Several Bailey structures were used on construction detours. Structures were also erected as temporary measures on many municipal roads.

Two structures built by district day labour were designed by this section. These were the Nat River bridge on Highway 101 at New Liskeard and the Providence Bay bridge on Highway 251 in the Sudbury District.

Contract bridge painting covered 23 structures totalling 4,100 feet including one mile of bridge handrail. District forces painted 12 structures totalling 1,300 feet plus one mile of handrail.

Electrical

During the year from April 1, 1963 to March 31, 1964, electrical equipment of varied types was installed at many locations.

The installations consisted of:

Highway Lighting	— 1,742 street lights
Traffic Signals	— 45 installed or rebuilt
Weigh Scale Signals	— 2
Flashing Lights	— 75
Signs Illuminated	— 78

In addition to this, many miscellaneous jobs such as wiring small buildings, radio towers, etc., were completed. Maintenance work was also performed as part of the regular work on buildings, flashers, traffic signals and highway lighting.

The details of Highway Lighting are as follows:

HIGHWAY LIGHTING

Installations Put into Operation April 1, 1963–April 1, 1964

DISTRICT 1 — CHATHAM

1-3B-9	Hwy. 3B and Ouellette Avenue Extension, Windsor (84) 400-watt mercury vapour units
1-401-2-20	Hwy. 401 and Hwy. 2, East of Tilbury (20) 400-watt mercury vapour units (temporary)
1-21-21	Hwy. 21 and Hwy. 81, Grand Bend (7) 400-watt mercury vapour units (temporary)
1-7-22-25	Hwy. 7 and Hwy. 22, Twp. of Warwick (6) 400-watt mercury vapour units
1-98-33	Hwy. 98, Twp. of Maidstone (Puce River) (6) 400-watt mercury vapour units (temporary)
1-18-34	Hwy. 18, Twp. of Gosfield (Wigle Creek) (8) 400-watt mercury vapour units (temporary)
1-7-21-37	Hwy. 7 and Hwy. 21, 4 miles east of Warwick (3) 400-watt mercury vapour units
1-21-401-39	Hwy. 21 and Hwy. 401, Ridgetown (8) 400-watt mercury vapour units (temporary)
T.S. 1-3-40	Hwy. 3, 2 miles west of Cedar Springs (6) 400-watt mercury vapour units (temporary)
1-39-39B-43	Hwy. 39 and Hwy. 39B, west of Tecumseh (3) 400-watt mercury vapour units

DISTRICT 2 — LONDON

2-401-8-57	Hwy. 401 and Hwy. 8, Preston (18) 400-watt mercury vapour units
2-401-76-67	Hwy. 401 and Hwy. 76 (4) 400-watt mercury vapour units
2-401-68	Hwy. 401 and County Road 3, Furnival Road (4) 400-watt mercury vapour units

DISTRICT 3 — STRATFORD

3-24-15	Hwy. 24, Hespeler Town Limits (C.L. 50/50) (17) 4′, 2-lamp fluorescent fixtures
3-8-20	Hwy. 8 (King Street) and Camp Avenue, north end of Diversion (17) 400-watt mercury vapour units (C.L. 50/50)
3-8-21	Hwy. 8 (King Street) and Block Road (6) 400-watt mercury vapour units
3-4-25	Hwy. 4 at Huron Road 25B, south limits of Blyth (3) 400-watt mercury vapour units
3-8-26	Hwy. 8, Pioneer Tower Road (3) 400-watt mercury vapour units
3-8-27	Hwy. 8, east end of Freeport Diversion (7) 400-watt mercury vapour units
3-8-30	Hwy. 8 and Rosslynn Grove crossover (2) 400-watt mercury vapour units
3-8-401-31	Hwy. 401, Leg "C" to Hwy. 8 and Kitchener (2) 400-watt mercury vapour units

3-4-84-36	Hwy. 4 and Hwy. 84, Village of Hensall (C. L. 50/50) (24) 4′, 2-lamp fluorescent fixtures
3-8-37	Hwy. 8, Crossover at Flying Dutchman Motel east of Freeport Diversion (2) 400-watt mercury vapour units

District 4 — Hamilton

4-Q.E.W.-1	Q.E.W. in Beamsville area at Prudhomme's (2) 400-watt mercury vapour units
4-403-59	Hwy. 403, Chedoke Expressway (Wolfe Island) (196) 400-watt mercury vapour units
4-Q.E.W.-64	Q.E.W. on Garden City Skyway over the Welland Canal (28) 1000-watt mercury vapour units (350) 4′, 4-lamp fluorescent fixt ıres (34) 4′, 2-lamp fluorescent fixtures
4-20-66	Hwy. 20 and King Street, Hamilton
4-20-67	Hwy. 20 and Hwy. 8, Hamilton
4-20-68	Hwy. 20 and Barton St., Hamilton (33) 400-watt mercury vapour units
4-8A-70	Hwy. 8A and International Bridge, Lewiston to New York (29) 400-watt mercury vapour units
4-6-97	Hwy. 6 and College Avenue, Guelph (8) 400-watt mercury vapour units
4-Q.E.W.-102	Q.E.W. at Niagara Street, St. Catharines (2) 400-watt mercury vapour units
4-6-116	Hwy. 6 north of Mount Hope (8) 400-watt mercury vapour units
4-2-20-118	Hwy. 2 and Hwy. 20, Burlington (6) 400-watt mercury vapour units
4-8-134	Hwy. 8 at Brock Road, Bullock's Corners (3) 400-watt mercury vapour units
4-401-144	Hwy. 401 and Hwy. 8 (8) 400-watt mercury vapour units
4-401-158	Hwy. 401 and Campbellville Road (10) 400-watt mercury vapour units
4-2-159	Hwy. 2 and Fiddler's Green Road (2) 4′, 2-lamp fluorescent fixtures
4-25-165	Hwy. 25 at Boyne, 7 miles north of Palermo (2) 400-watt mercury vapour units
4-57-169	Hwy. 57 and County Road 17, Wellandport (1) 400-watt mercury vapour unit
4-8-97-171	Hwy. 8 and Hwy. 97, Galt (2) 400-watt mercury vapour units
4-Q.E.W.-174	Q.E.W. and County Road 20, Black Creek (2) 400-watt mercury vapour units

District 5 — Owen Sound

5-9-21-7	Hwy. 9 and Hwy. 21, Kincardine (3) 400-watt mercury vapour units

DISTRICT 6 — TORONTO

6-5-51	Hwy. 5 and Dixie Road (2) 400-watt mercury vapour units
6-7-59	Hwy. 7 and Hwy. 11, Langstaff (8) 400-watt mercury vapour units
6-122-70	Hwy. 122 and 9th Line, Trafalgar Twp. (4) 400-watt mercury vapour units
6-7-48-86	Hwy. 7 and Hwy. 48, Markham (4) 400-watt mercury vapour units
6-7-106	Hwy. 7 and Don Mills Road, Woodbine Avenue (4) 400-watt mercury vapour units
6-27-150	Hwy. 27, slip off, slip on, north of Rathburn Road (6) 400-watt mercury vapour units
6-27-151	Hwy. 27, slip off, slip on, south of Burnhamthorpe Road (15) 400-watt mercury vapour units
6-27-151A	Hwy. 27, slip off, slip on, north of Burnhamthorpe Road (7) 400-watt mercury vapour units
6-7-153	Hwy. 7 and 3rd Line, Chinguacousy Twp. (2) 400-watt mercury vapour units
6-10-155	Hwy. 10 and Derry West Sideroad (2) 400-watt mercury vapour units
6-400-157	Hwy. 400, Crown Hill Extension (5) 400-watt mercury vapour units
6-7-50-160	Hwy. 7 and Hwy. 50 (4) 400-watt mercury vapour units
6-48-276	Hwy. 48 and Steeles Avenue (2) 400-watt mercury vapour units
6-7-280	Hwy. 7 at Wood Hill (2) 400-watt mercury vapour units Hwy. 48 and Baldwin (4) 400-watt mercury vapour units (temporary) Hwy. 401 and Don Mills Extension Detour (12) 400-watt mercury vapour units (temporary) Hwy. 401, east of Hwy. 27 (6) 400-watt mercury vapour units, high mounting (test) Hwy. 401, east and west of Avenue Road (43) 400-watt mercury vapour units (temporary) Hwy. 401, east and west of Dufferin (12) 400-watt mercury vapour units (temporary)
6-401-28	Hwy. 401 and Hwy. 400 (34) Removed 405-watt incandescent units (9) Removed 400-watt mercury vapour units (12) Installed 400-watt mercury vapour units
6-7-400-100	Hwy. 400 and Hwy. 7 (79) Removed 400-watt mercury vapour units
6-Q.E.W.-278	Q.E.W. and 9th Line south service road (2) 400-watt mercury vapour units
6-7-116	Hwy. 7 and Keele Street (2) 400-watt mercury vapour units
6-401-111	Hwy. 401 and Sheppard Avenue and Hwy. 2A (28) 400-watt mercury vapour units

6-401-92 Hwy. 401 and Woodbine Avenue
(5) 400-watt mercury vapour units installed and removed
(1) 400-watt mercury vapour unit installed (permanent)

District 7 — Port Hope

7-115-5 Hwy. 115 and Hwy. 2 interchange, west of Newcastle
(14) Removed 400-watt mercury vapour units

7-401-12 Hwy. 401 and Hwy. 115, Darlington
(64) Removed 400-watt mercury vapour units

7-12-7-35 Hwy. 7 and Hwy. 12, Twp. of Brock, north jct. of Sunderland
(4) 400-watt mercury vapour units

7-14-43 Hwy. 14 approaches to Belleville Bay Bridge
(2) 400-watt mercury vapour units

7-115-35-45 Hwy. 115 and Hwy. 35, north entrance to Newcastle
(3) 400-watt mercury vapour units

District 8 — Kingston

8-7-41-14 Hwy. 7 and Hwy. 41, Kaladar
(14) 400-watt mercury vapour units

8-14-588-18 Hwy. 14 at Development Road 588, north entrance to Foxboro
(3) 400-watt mercury vapour units

8-14-19 Hwy. 14 at south entrance to Foxboro
(4) 400-watt mercury vapour units

District 9 — Ottawa

9-Q-9 Queensway, Ottawa, Carling and Kirkwood to Bronson Avenue
(246) 400-watt mercury vapour units

9-7-29-29 Hwy. 17 and Hwy. 29, Carleton Place
(2) 400-watt mercury vapour units

9-17-34-32 Hwy. 17 and Hwy. 34, Hawkesbury
(6) 400-watt mercury vapour units

9-17-37 Hwy. 17 T.C.H., east of Rockland
(3) 400-watt mercury vapour units

9-17-44 Hwy. 17, west of Rockland
(5) 400-watt mercury vapour units

District 11 — Huntsville

11-11-34 Hwy. 11 at Second Concession and old Hwy. 11, south of Orillia
(3) 400-watt mercury vapour units

11-11-41 Hwy. 11 at West Street, Orillia
(2) 400-watt mercury vapour units

11-11-42 Hwy. 11 and Concession Road, Orillia
(2) 400-watt mercury vapour units

District 13 — North Bay

13-11-6 Hwy. 11 in Sundridge at Union Street
(2) 400-watt mercury vapour units

13-17-22 Hwy. 17 at main entrance to Camp Petawawa
(3) 400-watt mercury vapour units

District 14 — New Liskeard

14-11-112-8 Hwy. 11 and Hwy. 112, south Wye (Kirkland Lake)
(13) Removed 400-watt mercury vapour units

14-11-9 Hwy. 11, Gillies Road at south end of New Liskeard By-pass
(3) 400-watt mercury vapour units (temporary)

14-11-11 Hwy. 11 and Hwy. 11B, north end of New Liskeard By-pass
(4) 400-watt mercury vapour units

14-65-12 Hwy. 65 and service road to Hwy. 11 (New Liskeard By-pass)
(3) 400-watt mercury vapour units (temporary)

14-11-13 Hwy. 11 and service road to Hwy. 65 (New Liskeard By-pass)
(2) 400-watt mercury vapour units (temporary)

14-11B-558-16 Hwy. 11B at junction Hwy. 558, Town of Haileybury
(2) 400-watt mercury vapour units

District 18 — Sault Ste. Marie

18-17-3 Hwy. 17 and Garden River Road
(3) 400-watt mercury vapour units

18-17-9 Hwy. 17 and Hwy. 101, Michipicoten Twp.
(3) 8′, 2-lamp fluorescent fixtures

District 19 — Fort William

19-11-17-590-5 Hwy. 11, Hwy. 17, Kakabeka Falls, Murillo and Sec. Hwy. 590
(4) 175-watt mercury vapour units, C.L. 50/50

19-11-17-7 Hwy. 11 and Hwy. 17, west entrance to Nipigon
(3) 400-watt mercury vapour units

19-17-61-8 Hwy. 17 and Hwy. 61, Neebing Twp.
(2) 400-watt mercury vapour units
(1) 175-watt mercury vapour unit
Hwy. 61, Lot 12, Concession 2
(1) 400-watt mercury vapour unit
Hwy. 17, Lots 14 and 15, vicinity of Neebing River Bridge
(5) 400-watt mercury vapour units, C.L. 50/50

19-17-4 Hwy. 17 and Mill Road, Terrace Bay
(1) 400-watt mercury vapour unit, C.L. 50/50

District 20 — Kenora

Hwy. 105 and Hwy. 125, Red Lake weigh scale
(5) 400-watt mercury vapour units

TRAFFIC SIGNALS

Installations Put into Operation April 1, 1963–April 1, 1964

District 1 — Chatham

1-98-11 Hwy. 98, Twp. of Maidstone and Puce River, fixed time (temporary)

1-3B-12 Hwy. 3B and Grand Marais Road, Windsor, traffic actuated

1-3B-13 Hwy. 3B and Eugenie Avenue, Windsor, traffic actuated

1-402-17 Hwy. 402 at Murphy Sideroad, Sarnia, traffic actuated, advance green installed

1-3-40 Hwy. 3, 2 miles west of Cedar Springs, fixed time (temporary)

1-3B-45 Hwy. 3B and Concession III, Windsor, fixed time (temporary)

District 2 — London

2-126-7	Hwy. 126 (Highbury Extension) at Hamilton Rd., traffic actuated
2-3-4-16	Hwy. 3 and Hwy. 4 at Wellington Road, traffic actuated

District 3 — Stratford

3-8-5	Hwy. 8 at Camp Avenue, Kitchener, traffic actuated
3-86-6	Hwy. 86 at Wingham, fixed time, removed (temporary)

District 4 — Hamilton

4-8-15	Hwy. 8 and Hwy. 20, Stoney Creek, traffic actuated (rebuilt)
4-20-27	Hwy. 20 and King Street, Stoney Creek, traffic actuated (rebuilt)
4-20-31	Hwy. 20 and Barton Street east of Hamilton, traffic actuated (rebuilt)
4-2-20-72	Hwy. 20 and Hwy. 2, Burlington, traffic actuated (rebuilt)
4-Q.E.W.-73	Q.E.W. and Niagara Street, St. Catharines
4-8-97-86	Hwy. 8 and Hwy. 97, Galt, traffic actuated
4-57-87	Hwy. 57 and County Road 17, Wellandport

District 6 — Toronto

6-27-21	Hwy. 27 and Rexdale Blvd., traffic actuated (renovated)
6-7-30	Hwy. 7 and 4th Line, Markham, traffic actuated (rebuilt)
6-11-34	Hwy. 11 and Hwy. 7, Langstaff, traffic actuated (rebuilt)
6-7-51	Hwy. 7 and Hwy. 48, Markham, traffic actuated (rebuilt)
6-401-62	Hwy. 401 at Harwood Avenue, Ajax, eastbound, traffic actuated (renovated)
6-122-81	Hwy. 122 and 9th Line, Trafalgar Twp., traffic actuated (rebuilt)
6-401-90	Hwy. 401 and Woodbine Ave., southeast leg, traffic actuated
6-401-93	Hwy. 401 and Weston Road, northeast leg, traffic actuated
6-7-119	Hwy. 7 and 3rd Line, Twp. of Chinguacousy, traffic actuated
6-5-120	Hwy. 5 and Wharton Way, traffic actuated
6-401-85-59-2W-124	Hwy. 401 intersection, Dufferin with Yorkdale Rd., fixed time
6-Q.E.W.-142	Q.E.W. and 7th Line, Oakville, fixed time interconnected
6-48-143	Hwy. 48 and Steeles Avenue, traffic actuated
6-Q.E.W.-144	Hwy. 10 and Q.E.W., north and south service roads, semi-traffic actuated, co-ordinated
6-Dixon Road-148	Dixon Road and Elmbank Road, fixed time
6-Q.E.W.-149	Q.E.W. and 9th Line, south service road, traffic actuated (temporary)

District 7 — Port Hope

7-14-1	Hwy. 14 at Belleville Bay Swing Bridge, fixed time (temporary)
7-35-2	Hwy. 35 at Trent Valley Canal, Rosedale, traffic actuated (removed)
7-45-10	Hwy. 45 and Trent River Bridge, Hastings, fixed time (temporary)

District 8 — Kingston

8-2-2	Hwy. 2 at R.C.A.F. station entrance, Trenton, traffic actuated (renovated signals)

8-2-5 Hwy. 2, two miles east of Marysville, fixed time (temporary)
Installed September 1963, removed January 1964
8-2-6 Hwy. 2, Selby Creek Bridge, fixed time (temporary)
8-7-7 Hwy. 7 at Deer Creek Bridge, Madoc, fixed time (temporary)

District 13 — North Bay
13-17-6 Hwy. 17 at main entrance to Camp Petawawa, traffic actuated

District 17 — Sudbury
17-17-9 Hwy. 17 and Power Street, Copper Cliff, traffic actuated
17-69-13 Hwy. 69 at Lasalle Blvd., Sudbury, traffic actuated
17-69-14 Hwy. 69 at Pointe Au Baril, fixed time (temporary)

District 18 — Sault Ste. Marie
18-17-4 Hwy. 17 at McNab Street, fixed time, C.L. 50/50

District 20 — Kenora
Three weigh scale sites, two signals each

FLASHING BEACON

Installations Put into Operation April 1, 1963–April 1, 1964

District 1 — Chatham
H.L. 1-401-2-20 Hwy. 401 and Hwy. 2, east of Tilbury
(4) amber on warning signs (temporary)
1-21-401-25 Hwy. 21 and Hwy. 401
(5) amber flashers on signs (temporary)
1-79-80-26 Hwy. 79 and Hwy. 80, Alvinston
(2) red flashers on pedestal
H.L. 1-18-34 Hwy. 18, Wigle Creek, Twp. of Gosfield
(8) amber on sign (temporary)
Hwy. 21 and Hwy. 81, Grand Bend
(6) amber on sign on pedestal (temporary)
Hwy. 7 and Arkona
(2) red flashers on pedestal
Hwy. 3B at S. Cameron
(2) amber on pedestal

District 2 — London
2-401-76-39 Hwy. 401 and Hwy. 76
(2) red on pedestal
2-401-40 Hwy. 401 and County Road 3, Furnival Road
(2) red on pedestal
Hwy. 2 and Hwy. 76, Woodgreen, two miles east of Wardsville
(1) amber

District 3 — Stratford
3-8-1 Hwy. 8 at east end of divided highway west of Preston
(1) amber on pedestal

District 4 — Hamilton

4-7-72	Hwy. 7, curve west of Norval (1) amber flasher on sign
4-25-76	Hwy. 25 and Baseline Road, Milton (2) red flashers on pedestal
H.L. 4-2-20-118	Hwy. 2 and Hwy. 20, Burlington (1) amber flasher on pedestal

District 5 — Owen Sound

5-10-24-20	Hwy. 10 and Hwy. 24, east limit of Shelburne (1) red flasher on pedestal
5-26-21	Hwy. 26 at Pretty River Bridge (2) amber flashers on sign (temporary)

District 6 — Toronto

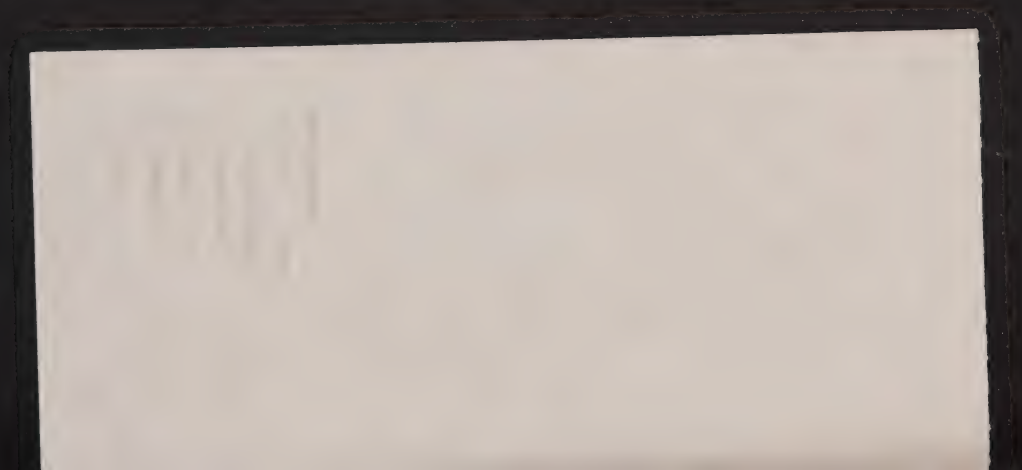
6-400-69	Hwy. 400 and Crown Hill Extension (1) amber on pedestal
6-27-88-70	Hwy. 27 and Hwy. 88, Bond Head (1) amber on pole
6-10-71	Hwy. 10 at Baseline Road (2) red
6-11-73	Hwy. 11 and Stouffville Road, Gormley Road (1) red on pedestal
6-11-80	Hwy. 11 and Fennell's Corners (Cookstown Road) (1) red on pedestal
6-27-81	Hwy. 27 and Steeles Avenue, C.N.R. bridge, east (1) amber on pole
6-27-82	Hwy. 27 and Steeles Avenue, C.N.R. bridge, west (1) amber on pole
6-27-83	Hwy. 27 south of Dixon Road Bridge (1) amber on pedestal
6-50-84	Hwy. 50, King Street, Bolton (1) amber overhead suspension (2) red on concrete pole
6-7-85	Hwy. 7 at Bathurst Street, west of Langstaff (1) red on pedestal
6-48-87	Hwy. 48 at Ballantrae (2) red on pedestal

District 7 — Port Hope

7-7-12-28	Hwy. 7 and Hwy. 12, Myrtle (1) red on pedestal
7-28-29	Hwy. 28, Peterboro, Rockhaven (1) amber on sign post
7-12-30	Hwy. 12 at County Road 12, Twp. of Brock (1) red on pedestal

District 8 — Kingston

8-401-16	Hwy. 401 at Wyman's Road (Drummy's Rd.) (2) amber flashers on sign (2) amber flashers on pedestal



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YEAR _____ COURSE _____

GENERAL COURSE (EXTENSION) ☐

EXTRA MURAL READER ☐

DATE

CITY & ZONE

ADDRESS

NAME

5C3269 SOS 68-69

MJ HODGSON

9 HUMEWOOD DR

TOR 10 APT 45

8-37-24 Hwy. 27 at Plainfield
(1) amber flasher on pedestal

District 9 — Ottawa

9-2-22 Hwy. 2 at Woods Creek, east of Cornwall
(1) amber flasher on bridge

9-7-15-23 Hwy. 7 and Hwy. 15, C.P.R. subway, one mile west of Bell's Corners
(2) amber flashers on sign
Hwy. 401 transition from 4 lanes to 2 lanes east
(3) amber flashers on sign (temporary)
Hwy. 401 transition from 2 lanes to 4 lanes west
(3) amber flashers on sign (temporary)

District 20 — Kenora

29-17-71-1 Hwy. 17 and Hwy. 71, east of Kenora
(1) red flasher on pedestal

SIGN LIGHTING

Installations Put into Operation April 1, 1963–April 1, 1964

District 4 — Hamilton

4-20-2-14 Hwy. 2 and Hwy. 20, Burlington
(1) 150-watt incandescent fixture

4-405-15 Hwy. 405 and Q.E.W., St. David's
(2) 8′ fluorescent fixtures

District 6 — Toronto

6-Q.E.W.-28 Q.E.W. and Hwy. 10, west of Hwy. 10, eastbound lane (structure)
(1) 8′ fluorescent fixture
(2) 6′ fluorescent fixtures

6-401-400-36 Hwy. 401 and Hwy. 400 on southwest side of the bridge (Hwy. 400 north)
(12) 6′ fluorescent lamps internally illuminated sign
(2) 4′ fluorescent lamps internally illuminated sign

6-400-11-38 Hwy. 11 and Hwy. 400 extension, Crown Hill
(2) 8′ fluorescent fixtures

6-Q.E.W.-51 Q.E.W. west on Hwy. 27 overpass
(2) 8′ fluorescent fixtures

6-Q.E.W.-60 Q.E.W. east on Hwy. 27 overpass, west side of bridge
(2) 8′ fluorescent fixtures

6-401-2A-63 Hwy. 401 eastbound lane, east side of Sheppard Avenue
(11) 8′ fluorescent fixtures
(11) 6′ fluorescent fixtures

6-401-2A-68 Hwy. 401 and Hwy. 2A west at ramp to Hwy. 401 west, east of Toronto
(1) 8′ fluorescent fixture
(2) 6′ fluorescent fixtures

T.S. 6-11-34 Hwy. 11 and Hwy. 7, Langstaff
(7) 150-watt incandescent fixtures

6-7-64	Hwy. 7 and Don Mills Road (4) 150-watt incandescent fixtures
T.S. 6-5-75	Hwy. 5 and Cawthra Road (1) 150-watt incandescent fixture
T.S. 6-122-81	Hwy. 122 and 9th Line, Trafalgar Twp. (7) 150-watt incandescent fixtures
T.S. 6-10-Q.E.W.-144	Hwy. 10 and Q.E.W., north and south service roads
T.S. 6- Dixon-148	Dixon Road and Elmbank Road, W.P. 3-58 (4) 150-watt incandescent fixtures

District 8 — Kingston

8-401-5	Hwy. 401 and Ivy Lea information centre (2) 8′ fluorescent fixtures

District 13 — North Bay

13-11-3	Hwy. 11 and North Bay By-pass at Algonquin Avenue (1) 8′ fluorescent fixture

District 20 — Kenora

20-17-71-3	Hwy. 17 and Hwy. 71 (2) 8′ fluorescent fixtures

Forestry and Landscaping

Tree planting operations were carried out in fifteen districts during the fiscal year accounting for 70,351 trees and shrubs. A considerable portion of the plantings were located on four-lane highways in Chatham, London, Hamilton, Toronto, Port Hope, Kingston and Ottawa districts.

The operation of saving trees on new construction by use of the "Tree Saver" machine continues with good results. Some 1,365 trees were relocated by this method.

Grass seeding totalling 21,930,040 square yards was completed with approximately 15 per cent carried out by commercial contract. The use of jute matting for erosion control was explored further and field tests show good results on slopes, as well as ditchlines. Tentative specifications have been drawn up for use of this material in contract.

An extensive program of weed and brush spraying was carried out throughout the eighteen districts. A total of 10,705 miles sprayed indicates a new high in area covered by this operation. Soil sterilant work to remove growth in a limited area around guide rail has also increased and subsequently mowing and hand work has been reduced to a minimum.

Department forestry crews in the southern districts were active in the removal of 5,356 dead and dangerous trees. To improve grass mowing conditions, stump removal contracts were let in four districts to remove 4,360 stumps.

TABLE SHOWING TOTALS OF WORK DONE 1963-64

Class of Work	Number	Tons	Miles
Automatic signals at railway crossings	42		
Bituminous hot-mix pavement		1,361,927.28	417.74
Bituminous mulch and cold mix		117,033.00	775.95
Bituminous prime on gravel roads (gals.)	1,704,581	55,878.15 (sand)	635.37
Bituminous resurfacing old pavement		193,720.70	209.33
Bituminous surface treatment (gals.)	756,602	33,528.36 (chips)	264.37
Bridges built	103		
Bridges painted	52		
Calcium dust layer — gravel roads		8,052.02	
Calcium for de-icing roads		24.00	
Concrete base pavement, asphalt top		44,208.00	17.87
Concrete pavement (sq. yds.)	1,617,128		89.74
Crushed gravel and stone (by contract)		6,778,973.80	1,292.22
Crushed gravel and stone (by Dept. forces)		680,027.96	7,804.41
Grading and culverts			422.96
Granular base on new grading		13,783,011.04	493.43
Granular base on old grading		637,748.00	1,047.38
New buildings erected this year	85		
Off-road parks maintained	215		
Roads snowplowed and kept open (King's Hwys.)			10,649.74
Roads snowplowed and kept open (Sec. Hwys.)			2,919.84
Roadside picnic places maintained	783		
Routine maintenance (King's Hwys.)			10,649.74
Routine maintenance (Secondary Hwys.)			2,963.47
Salt for de-icing roads (raw)		161,724.62	
Salt in sand, stockpiled		53,641.05	
Sand for winter maintenance		976,589.75	
Scale houses maintained	39		
Seeding by Department forces (acres)	4,392.14		
Shrubs received and planted	50,598		
Signs newly erected or replaced	59,436		
Snow hedges planted this year	3,300		
Snow fence erected, dismantled, stored			1,069.55
Traffic lights installed this year	32		
Weed control			9,496.58
Zone painting (King's Hwys.) (gals.)			10,874.64
Zone painting (Secondary Hwys.) (gals.)			651.63
Development roads built			34.40

CONTRACT WORK FOR 1963-64

T. C. MUIR, P.Eng.—Contract Control Engineer

Once again this year witnessed an increase in the number of contracts of all types awarded, along with an increase in the total monetary value of all contracts awarded. This year there were 439 contracts awarded compared to 421 contracts of the previous year representing an increase of 4.3 per cent and this increase in the number of contracts awarded resulted in a 9.8 per cent increase in the total monetary value of the contracts awarded over the previous year.

In 1957 the Department inaugurated its qualification procedures pertinent to capital contract construction and as of the present date, the use of qualifications of contractors has so expanded that 95 per cent by dollar volume of all capital contracts awarded this year, was qualified. Last year saw the implementation of the application of penalties under the qualification procedures for low quality and poor performance and this policy has been further extended so that now 108 warning letters have been sent to delinquent contractors advising them of the Department's concern with their work and 73 reductions have been found necessary to be made in the contractors' rating. In the forthcoming 1964 construction year, the qualification procedure will be applied to all maintenance

contracts (Ordinary Expenditure) and also to involve the structural steel industry under the Department's calling of contracts for structural steel. With this latter adoption, qualification may, virtually, be applied to practically 85 per cent of all contracts awarded in 1964, in numbers of contracts so awarded and 98 per cent in respect to monetary value of all contracts so awarded.

The Department this year has also increased its tempo of the use of liquidated damages and as a result well over 90 per cent of the Department of Highways' contracts contain this special clause.

By the application of the liquidated damages policy and an increased application of penalties under pre-qualification, the Department has witnessed a decided improvement in the number of contracts being completed on time and this, therefore, has further resulted in a firmer establishment of future programs and schedules.

Where certain small works are of extreme urgency and time does not allow for full-scale pre-engineering, designing and tendering time, the Department has improvised what is known as invitation bids wherein certain reliable contractors and who were probably ideally located to the proposed contract, would be invited to bid on the project. It was found desirable this year to have some 85 such contracts called and the results have been proved most effective.

Once again this year an accelerated program is maintained on Roads-to-Resources and Forestry Roads and in order to implement these programs and take full advantage of the shareability provided by the Federal Government, it was found most desirable to resort to what is known as an equipment rental contract wherein the Department requests bids on equipment and labour by publicly advertised contracts in order to carry out this capital construction work on these access roads types. This was used on six contracts this year and owing to the previously gained experience on the same type of contracts in other years the results were found very satisfactory, particularly in having most of these contracts completed within one construction season.

The following is a summary of contract work awarded for 1963-64:

Type of Work	Total
MAINTENANCE	
Prime dust layer	8
Crushed gravel (including 22 capital contracts)	114
Hot-mix patching	20
Surface treatment	10
Winter sanding	19
Screened sand	18
Bridge painting	5
Calcium chloride apply	2
Stump removal	4
TOTAL	200
CONSTRUCTION	
Concrete paving	3
Grading and culverts } 40 structures included	113
Grading and hot-mix paving }	15
Hot-mix paving	13
Structures	9
Structural steel	10
Prestressed beams	20
Miscellaneous	56
TOTAL	239
GRAND TOTAL — MAINTENANCE, CONSTRUCTION	439

MATERIALS AND RESEARCH DIVISION

A. RUTKA, P.Eng., *Materials and Research Engineer*

The Materials and Research Division consists of seven engineering sections; each section providing a specialized technical service to various branches within the Department, concerned with planning, design, construction and maintenance of highways. The function of the division is to test and evaluate materials, to provide pavement and foundation designs, to assist in quality control operations, to assess new materials and new construction techniques, and to keep abreast of new developments which are of economic importance to Department work. Most of the pre-engineering and quality control functions are carried out by the five regional offices.

Materials and Research personnel assisted the Training Committee in several courses of instructions given to the construction staff, and to municipal employees, at Downsview, by preparing and giving lectures. The number of courses for municipal employees had increased over the previous year, reflecting the need and interest in quality control aspects by the municipalities. A course in air photo interpretation was given for the first time. The regional staff also conducted seminar-type meetings at district level, reviewing specification changes, and construction practices.

An active research program was carried out to find specific answers to the many problems facing the Department. Upon the completion of each research project, technical reports were prepared and distributed within the Department.

The following reports were completed during the year:

1. Accelerated strength testing of concrete cylinders.
2. An evaluation of concrete repair materials.
3. Principles of geophysical resistivity techniques.
4. Some aspects of nuclear soil testing.
5. Learning to live with a reactive carbonate rock.
6. Experimental composite pavement, Highway 401 near Milton.
7. A field investigation of aggregate drying.
8. The compaction of asphaltic concrete.
9. Snow and ice control of the provincial highway system of Ontario.
10. Continuous wire mesh in bituminous resurfacings.
11. Condition of concrete bridge decks in Ontario.
12. Unusual surface deterioration of a concrete bridge deck.

Eight papers were presented by the division at various technical conferences in Canada and the United States.

Physical Testing Section

J. J. Casey, P.Eng., Principal Testing Engineer

Physical testing is carried out at the central laboratory, the five regional laboratories, and nine mobile laboratories. The central laboratory is equipped to perform all tests; the regional and mobile laboratories primarily test for quality control purposes. The numbers and type of tests for quality control are given in Tables I and II.

TABLE I—SAMPLES TESTED IN REGIONAL AND MOBILE LABORATORIES—1963-64

Type of Test	Regional Laboratories					Mobile Laboratories			
	South-western	Central	South-eastern	Northern	North-western	Ottawa	Cornwall	St. Catharines	Kent Centre
Aggregates	277	3,137	466	346	132	186	143	27	.....
Aggregates, asphalt mix design	127	224	96	52	60	.....	.....	.....	.....
Bituminous pavement, extraction	876	1,348	846	610	574	17	.....	.....	.....
Bituminous pavement, mix design	38	52	29	12	15	.....	.....	.....	.....
Bituminous pavement, plant checks	438	.....	399	290	264	.....	.....	.....	.....
Compaction, soils and aggregates	1,662	1,160	135	22	92	.....	168	.....	702
Concrete beams	58	190	55	.....	.....	130	200	106	152
Concrete cylinders	2,998	7,966	1,685	1,057	1,139	3,202	1,821	1,023	1,795
Concrete mixes and design	.....	553	.....	.....	.....	.....	.....	.....	.....
Cement	.....	1,342	.....	.....	.....	.....	.....	.....	.....
Concrete mixes and design — Aggregates	.....	356	.....	.....	.....	.....	.....	.....	.....
Granular base course	467	118	270	160	159	91	79	.....	56
Sand cushion	195	.....	180	202	113	108	62	.....	.....
Soils and foundations	629	4,023	980	59	177	55	60	.....	12
Winter sand	66	52	.....	5	9	32	.....	.....	.....
Totals	7,811	20,521	5,141	2,815	2,734	3,821	2,533	1,156	2,717

TABLE II—MOBILE ASPHALT COMPACTION LABORATORIES

Test Sample	South-western	Central	South-eastern	Northern	North-western
Plant Check	78	76	33	66	19
Compaction Check	72	56	103	56	84
Asphalt Extraction	300	264	272	244	206

Quality control of fabricated and manufactured products required 212 plant inspections and involved 1,300 tests on concrete and corrugated metal pipe, prestressing cables, catch basin and snow plough castings, grader blades, aluminum and concrete lighting standards, and guide rails.

Progress was made in the laboratory phases of continuing development and research projects, and several new projects were started. These were as follows:

1. Concrete repair materials.
2. Alkali-reactive aggregates.
3. Concrete durability.
4. Coating and stripping resistance of aggregate types.
5. Optimum laboratory mixing and compaction temperatures of bituminous mixtures.
6. Evaluation of asbestos fibre in bituminous mixes.
7. Evaluation of mix design and construction requirement for thin overlays.

Laboratory personnel assisted in writing and revising material specifications. They were also active on many technical committees concerned with the preparation of standards and specifications.

Chemical Section

A. C. Suter, P.Eng., Principal Chemical Engineer

The Chemical Section provides technical assistance and testing services to many sections within the Department, and to many municipalities. Several materials were evaluated and recommendations were made for purchasing those products meeting the standards established. Control testing was also carried out on all material of a chemical nature purchased by the Department. A number of problems were investigated during the year. One of the largest problems concerning the Department is the contamination of wells by salt in the vicinity of patrol garages. A new committee has been established to review the extent of this problem, and to find ways of reducing it.

The section carried out 30 performance evaluations on various materials, and tested 1,500 samples representing over 100 types of materials. The details are shown in Table III.

Seven material specifications were written or revised.

Materials Section

W. R. Bennett, P.Eng., Principal Materials Engineer

This section provides technical advice and guidance on suitability of aggregates for asphalt and concrete purposes, and on quality control of asphalt and

TABLE III—CHEMICAL SECTION

Materials Tested	No. of Samples	Evaluations
Antifreezes	6	Luminaires
Blankets	1	Dry copiers
Bridge primers	65	Salt and $CaCl_2$ mixtures
Bridge paints	166	Guide rail paints
$CaCl_2$ solutions	38	Bridge paint (laboratory)
Cement	104	Bridge paint (field)
Concrete additives	39	Porcupine repellent paints
De-icers	2	Traffic paint tests (Owen Sound) — overlay beads vs. premix beads
Deodorizers	7	Plywood for signs
Dry copiers	10	Sign strippers
Equipment paints	52	Flashing warning lights
Fertilizers	4	Protection of sander bodies
Fluorescent sheeting	10	Safety cones
Grass seed	39	Traffic paint
Guide rail paints	28	Sign paints (4)
Herbicides	34	Salt spray drift
Luminaires	2	Contamination problems
Metals	123	Paint brushes
Paint brushes	32	Safety helmets
Reflectorizing beads	27	Saftey clothing
Salt	20	Guard rail coatings
Soils	146	Clear coatings
Safety helmets	3 types	Thermoplastic traffic markers
Safety clothing and fabrics	18	Zinc rich paints
Safety cones	8	Coal tar coatings
Sign materials	94	Sealers
Traffic paints	239	Effect of road materials on automotive finishes
Thinners	27	Neoprene
Tarpaulins	2	Paint application — brushing vs. spraying
Vapour barriers	5	Pretreatment of concrete for traffic paint
Warning lights	10	Pretreatment of aluminum and galvanized metal
Warning flags	14	
Miscellaneous	82	
Total	1,457	

concrete mixtures, to construction and maintenance personnel. A considerable amount of work was devoted to the improvement of the quality of the concrete pavements by undertaking a study on the uniformity of aggregate gradations, and their effect on concrete properties. In conjunction with the laboratory, a field examination was made of many structures that were affected by alkali reactive aggregates, and 100 cores were obtained from structures and pavements of varying ages, for detailed laboratory studies.

In order to overcome many of the problems encountered with joint sealers, in concrete pavements, neoprene joint sealers were used on all concrete paving contracts covering 120 miles of two-lane pavement construction.

The personnel of this section assisted in the revision of the structural concrete specification.

In conjunction with the Research Section, the bituminous group carried out the following investigations:

1. The use of special reagents to coat the interior of truck bodies to prevent adhesion of hot-mix. It was intended that this reagent would replace the present material used, namely fuel oil, which is detrimental to bituminous concrete.

2. To test the effectiveness of an additive in increasing the coatability of aggregate with asphalt cement, the additive was incorporated into a portion of hot-mix on one specific contract.
3. The use of electronic screeds on hot-mix construction. These controls were closely investigated, and watched, in order to determine if they would result in a better rideability and finish to the asphaltic pavement.
4. To determine the durability of the aggregates and mixes on contracts where the aggregate was double dried, a program of sampling of bituminous pavements was instituted.
5. The evaluation of fillers in a bituminous concrete. Complete reports on this work have been prepared, detailing the construction operations and test results.

Soils Section

G. A. Wrong, P.Eng., Principal Soils Engineer

The Soils Section co-ordinates the preliminary soils investigations for pre-engineering purposes carried out by the regions, and provides an air photo interpretation and geophysical service to each of the regional offices. This section initiates, assembles and analyzes the performance information, and assists the Program Section in preparing pre-engineering construction programs.

During the year, aerial photo surveys for terrain typing and for the location of potential granular and borrow materials, were carried out on 57 projects, covering 1,640 square miles. Nineteen seismic surveys were carried out to supplement boring data, or to establish the characteristics of the overburden and the soil-bedrock profiles.

Two courses, each of two weeks' duration, were given in aerial photo interpretation, to Department personnel, and a manual on "Principles of Photo Interpretation in Highway Engineering Practice" was prepared.

All reports for design purposes are reviewed, and this section establishes the standards of design and construction practices to be followed regarding soil and granular materials, and their uses throughout the province.

Foundation Section

A. Stermac, P.Eng., Principal Foundation Engineer

This section carries out investigations for bridge sites, for patrol garage sites, and for the determination of the stability of deep cuts and high embankments, in order to arrive at the most economical foundation designs, and the stability of road sections. A total of 124 investigations were made by the staff. In addition, soils consultants were retained for 16 investigations. The details of these investigations are shown in Table IV.

TABLE IV—FOUNDATION INVESTIGATIONS

	Section	Consultant
Structures (King's Highways)	58(*)	16
Structures (municipal)	17	..
Stability investigations	7	
Field tests (instrumentations)	8	
Patrol yards — garages	34	
Total Number of Jobs	124	16

(*) Six instrumentation projects included.

Drilling		
Drilling in soil	20,013 feet	5,621 feet
Drilling in rock	726 feet	256 feet
Dynamic cone penetration	9,886 feet	1,679 feet
Laboratory Tests		
Classification	734	107
Atterburg limits	1,528	282
Natural moisture content	2,552	1,035
Density	732	227
Unconfined compression	670	233
Undrained (quick) triaxial	99	
Laboratory vane	139	17
Undrained triaxial with pore pressure measurements	53	.....
Consolidation	41	26
Organic content	29	.....
Specific gravity	7	.....
Direct shear	11	.....

Many of these investigations were made of problems that developed during the course of construction. In the most difficult cases, it was necessary to undertake a detailed study by installing instrumentation equipment, and to take measurements over an extended period of time. Some of these investigations proved to be interesting, and two papers on specific problems were prepared and submitted for publication to technical societies.

Office Engineer's Section

D. MacDonald, P.Eng., Office Engineer

This section maintains a record of all sand, gravel or quarry sources, totaling approximately 12,000; evaluates test results and prepares strip maps for contract purposes. One hundred strip maps were prepared showing the location and suitability of sources for contract purposes. Test results for 4,900 samples were received and analyzed during the year, and recommendations were made for suitability of aggregates for various highway uses. Approximately 400 pit sketches were revised, indicating changed conditions at the sources.

This section also maintains an up-to-date list of commercial aggregate sources. Samples from commercial sources are taken on a regular basis, to determine the quality of the production on a continuing basis.

Research Section

M. D. Armstrong, P.Eng., Principal Research Engineer

Further progress was made with the various projects underway, and several new problems were tackled. Brief statements on some of the projects follow:

1. *Road Roughness Studies:* To permit detailed studies of pavement roughness, a copy of the British Road Research Laboratory 16-wheel profilometer was built during the year. This equipment provides a longitudinal profile of the road surface, a classified count of irregularities in the surface in 0.1 in. class intervals and a graphical record of the cumulative roughness as the machine is pulled along the pavement under test. A correlation of the results obtained with this equipment and the B.P.R. Bump Integrator used in previous roughness studies will be developed as quickly as possible, and it is planned to make extensive use of the new equipment on concrete paving.

2. *Testing of Bituminous Distributors:* Field testing of bituminous distributors was continued with 44 individual tests and a method of measuring the distribution of cover aggregate was developed. This field work revealed many unsatisfactory features of surface treatment work.

   A distributor calibration station has been completed in the Toronto area, and this will be in full use in 1964, both as a research tool, and as a means of training operators in the adjustment and use of their equipment.

3. *Asphaltic Concrete Compaction:* A field comparison of the effectiveness of light, medium and heavy pneumatic rollers in compacting asphaltic concrete was completed in 1963. The pneumatic rollers were used as intermediate rollers, and with the 3-roller sequence used the tests showed that only the heavy roller gave consistently acceptable results on the contracts selected for these tests. Other types of rollers, possibly used in different sequences, will be investigated in 1964.

4. *Classification of Chert:* A Laboratory study of the classification of chert has reached the final stages. Chert from several quarries in southwestern Ontario were first classified visually according to colour, texture and hardness and then each class was subjected to a series of tests including specific gravity, absorption, freezing and thawing in water and in salt solution, gel-pat tests, mortar-bar tests and chemical tests. A preliminary analysis of the results indicates that the cherts which are harmful to Portland cement concrete can be identified, but further tests, both in the laboratory and the field, will be needed to establish the proportion of the different types of chert that can be tolerated in concrete structures and pavements.

Ontario Joint Highway Research Program. During 1963, six new projects were started at the universities, and grants were made to cover the completion of active projects, and the preparation of reports on earlier projects, at Queen's University and the University of Toronto.

The new projects were as follows:

At Queen's University —

1. Consolidation of varved clays.
2. The modulus of deformation of granular materials.
3. Factors affecting trip attraction rates.

At McMaster University —

4. Kinematic waves in freeway traffic.

At Waterloo University —

5. Analysis of road roughness records by power spectral density techniques.

At Windsor University —

6. Prediction of scour at bridges.

The reports authorized for publication or actually published in 1963, under the Joint Highway Research Program, were as follows:

Report No. 14: Compilation of Frost Susceptibility Criteria up to 1961 (Queen's)

Report No. 15: Soil Type in Relation to Frost Action (Queen's)
Report No. 16: Tests on a Full-scale Pony-truss Bridge. Part I: Laminated Timber Deck (Queen's)
Report No. 17: Effect of Chemicals and Abrasives in Snow and Ice Removal (Queen's)
Report No. 18: Checking and De-lamination in Glulam Bridge Members (Toronto)
Report No. 19: Study of Shaley Gravel (Toronto)
Report No. 20: Relative Density Tests on Some Ontario Sands (Queen's)

Regional Activities

Each Region is headed by a Regional Materials Engineer, who is responsible for detailed pre-engineering soils surveys, quality control of materials relating to soils, asphalt and concrete, and for the control testing of materials. In addition, they carry out investigational or research work initiated by the various headquarters engineering sections. The laboratory activities of each Region are summarized in Tables I and II, and the field activities in Table V.

The highlights of the work of the regions follow:

1. Most of the regions increased the use of the Benkelman Beam for the purpose of obtaining data for the design of resurfacing projects, and for the evaluation of existing pavements.
2. All pavements in the regions were reviewed and a priority list was prepared and recommended for a five-year construction program, based on performance.
3. A program of routine testing of commercial aggregate sources was set up.
4. Regular sampling of cement and admixtures was instituted.
5. Pre-engineering assistance and contract inspection for municipal projects was increased over the previous year.
6. Observations were made on several test sections established to determine the causes of cracking in flexible pavements.
7. Each region was responsible for preparing the syllabus, and for presenting one or two inspection courses at Downsview.

TABLE V—FIELD OPERATIONS—REGIONS

Soils	South-western	Central	Eastern	Northern	North-western
Borings — miles of highway investigated	203	234	158	128	118
Design reports — King's highways and development roads	57	28	46	44	22
— Municipal	27	33	3	.....	3
Grading — contracts inspected	46	53	35	22	20
Surveys — frost heave and spring performance (miles)	2,292	1,500	1,262	1,532	1,600
Bituminous					
Paving contracts inspected (miles)	35	43	41	20	12
Concrete					
Paving inspected (miles)	47	26	52		
Structure contracts inspected	37	53	32	22	14
Benkleman Beam					
Sections tested	41	20	23	46	30

CONSTRUCTION OF THE TRANS-CANADA HIGHWAY INCLUDING OTTAWA QUEENSWAY, 1963-64

T. C. MUIR, P.Eng., *Contract Control Engineer*

As in the previous year there was a reduction in the construction work on the Trans-Canada Highway. However, the construction rate on the Ottawa Queensway continued at an accelerated pace.

Grading completed this year was approximately 36 miles as compared to 57 miles of the previous year. Paving completed this year was approximately 31 miles as compared to 41 miles the previous year; however, there were ten structures completed this year as compared to eight last year.

On stage III of the Ottawa Queensway, grading and work on adjacent city streets and five remaining structures were completed. Only the eastern 4,400 feet of concrete paving to O'Connor Street remains for this stage to be completed in its entirety. Two bridges on stage IV of the Ottawa Queensway have now been completed together with grading as far as the Rideau Canal with a start being made on the Canal and Main Street bridges.

On the Trans-Canada Highway, in the Kingston District in the area of Madoc, good progress was made on a large grading contract which will bring the section of Highway 7 between Madoc and Actinolite up to Trans-Canada Highway standards.

In the Huntsville District on Highway 12 at the Narrows between Lakes Simcoe and Couchiching, work was started on a new high-level structure and approaches to span the Trent Canal System and thus eliminate the existing swing bridge. This, when completed, will eliminate traffic congestion caused by the heavy water traffic during the summer months.

In the Sault Ste. Marie District, hot-mix paving was completed from Havilland Bay to Chippewa Falls and continuing on farther westerly, grading, drainage, granular base and hot-mix paving was completed from Chippewa Falls to Secondary Highway 563, a distance of 9.17 miles, together with the completion of the Carp River Bridge.

In the Fort William District, grading and base course paving work was completed between Fort William and Kakabeka Falls. Grading was completed on the 11-mile section from English River easterly and a paving contract over this section was let in early 1964.

In the Kenora District, rock grading and hot-mix paving was completed from the junction of Highways 17 and 71 westerly for 5.73 miles. A heavy rock grading contract from Keewatin westerly for 9.56 miles is being carried out. At Dryden the grading work on two contracts ten miles east to eight miles west of Dryden was completed and a paving contract over this eighteen-mile grading section is now 50 per cent complete and will be completed by July 1964.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and culverts	1,181.41 miles
Bituminous hot-mix pavement	1,080.52 miles
Permanent bridges and structures built	161

Grading and Culverts

District	Hwy.	Location	Total Miles	Compl. Previous Years	Compl. This Year
Port Hope	7 & 12	0.5 mi. n. of Blackwater, n. to Jct. Hwy. 7	4.61	.....	4.61
Kingston	7	From east limits Madoc By-pass easterly to Jct. Hwy. 37	6.45		2.25
Ottawa	Q'way	Bell St. to O'Connor St.	0.90	0.06	0.84
Ottawa	Q'way	O'Connor to Elgin St.	0.22	.....	0.22
Ottawa	Q'way	Elgin St. to Main St.	0.20	.....	0.10
Sault Ste. Marie	17	Chippewa Falls to 1.14 mi. w. of Jct. Sec. Hwy. 563	9.17	1.90	7.27
Fort William	17	English River easterly 10.40 miles	10.40	2.50	7.90
Fort William	17	C.P.R. overhead 6.3 mi. w. of English River	1.55	.....	1.55
Kenora	17	Dryden e. limits easterly 10.44 mi.	10.44	8.83	1.61
Kenora	17	Longbow Corners westerly	5.73	4.13	1.60
Kenora	17	Dryden westerly to Oxdrift	7.36	5.58	1.78
Kenora	17	West end of Keewatin westerly	9.56	.....	6.41
		TOTALS	66.59	23.00	36.14

Bituminous Hot Mix

Port Hope	7 & 12	0.5 mi. n. of Blackwater, n. to Jct. Hwy. 7	4.61	.....	4.61
Kingston	7	Kaladar easterly	10.90	8.84	2.06
Sault Ste. Marie	17	Havilland Bay to Chippewa Falls	9.40	.....	9.40
Sault Ste. Marie	17	Chippewa Falls to 1.14 miles west of Sec. Hwy. 563	9.15	.....	9.15
Kenora	17	Jct. Hwys. 17 and 71 westerly	5.73	.....	5.73
		TOTALS	39.79	8.84	30.95

Granular Base (New Grading)

Port Hope	7 & 12	0.5 mi. n. of Blackwater, n. to Jct. Hwy. 7	4.61	.....	4.61
Kingston	7	Kaladar easterly	8.84	3.30	5.54
Kingston	7	East limits Madoc By-pass to Jct. Hwy. 37	6.45	.....	2.25
Ottawa	Q'way	Carling Ave. easterly to O'Connor	3.40	.....	2.60
Fort William	17	English River easterly	10.40	2.50	7.90
Kenora	17	East limits Dryden easterly	10.44	8.83	1.61
Kenora	17	Longbow Corners westerly	5.73	4.13	1.60
Kenora	17	Dryden westerly to Oxdrift	7.36	5.58	1.78
Kenora	17	Keewatin westerly	9.56	.....	2.10
Kenora	17	Blackwater Creek 10.4 miles east of Dryden westerly	19.31	.....	2.90
		TOTALS	86.10	24.34	32.89

New Bridges 1963-64

District	Hwy.	Location
Ottawa	Q'way	Bridge No. 18 at Bronson Ave.
Ottawa	Q'way	Bridge No. 20 at Kent Street
Ottawa	Q'way	Bridge No. 22 at O'Connor Street
Ottawa	Q'way	Bridge No. 21 at Bank Street
Ottawa	Q'way	Bridge No. 37 at Metcalf Street
Ottawa	Q'way	Bridge No. 23 at Elgin Street
Sudbury	69	Naiscoot River Bridge 3.7 mi. north of Point-au-Baril Station
Sault Ste. Marie	17	Carp River Bridge
Fort William	17	6.3 miles west of English River, Twp. of Corman
Kenora	17	Wabigoon River Bridge approx. 3.2 miles west of Dryden

TOTAL: 10 New Bridges

MINING, ACCESS, RESOURCES AND FORESTRY ROADS REPORT, 1963-64

T. C. MUIR, P.Eng., *Secretary*
Mining and Access Roads Committee (*Interdepartmental*)

The Mining and Access Roads Committee, consisting of the Treasurer of Ontario as chairman, and the Ministers of the following departments: Highways, Lands and Forests, Mines, and Municipal Affairs, administers the fund which is voted by the Legislature in the Department of Mines' estimates. The Committee would administer the works carried out under the Roads-to-Resources Program and under the Mining Assistance Program of the Department of Mines. The Committee would also act as an Advisory Committee for the works to be performed under the Forest and Access Roads and Trails Agreement and the Forestry Agreement.

The Resources Roads Program is carried out under an agreement between the Federal Government and the Province of Ontario, and under this agreement the Department of Highways, acting as the agent for the Ontario Government, will design and supervise such program which eventually proposes an expenditure in northern and northwestern Ontario in the amount of $15,000,000 by March 31, 1967. The cost of such works would be shared between the Federal Government and the Provincial Government, except in the cases wherein a private enterprise would directly benefit. In such latter case, the costs would be shared between the two governments and the private company concerned.

The following was accomplished this year:

NEW LISKEARD DISTRICT

Mining Assistance Road:

Under mining assistance from the Department of Mines on a 50 per cent shareability between the Rusty Lake Mining Corporation and the Department of Mines through the Mining and Access Roads Committee, improved some 21 miles of the mines' access road by correcting the drainage and placing granular material on certain sections.

Also through the Department of Mines and the Committee, the Department of Mines and the Stairs Exploration Company shared equally in the costs of the nine miles of access road constructed to date by the mining company.

SUDBURY DISTRICT

Resource Road — The Flack Lake Road:

Under the Resources Road Agreement a new project was added by a codicil agreement in October 1963 wherein the Federal and Provincial Governments would share equally in the construction costs of an access road from eight miles north of Elliott Lake northerly to intersect Highway No. 129 in the vicinity of Aubrey Falls (known as the Flack Lake Road). Approximately seven miles of new road was constructed in this year but did not qualify for cost shareability

since the agreement was entered into in October 1963, but gravelling over this section is now under way and this cost is shareable under the new agreement. Meanwhile, another approximate eight miles is presently under construction to intersect Secondary Highway 546 and this is under the new agreement.

SAULT STE. MARIE DISTRICT

Mining Assistance Road:

Under an agreement through the Mining and Access Roads Committee an equal shareability in the costs of the construction to date of the 17 miles of access road constructed by the Tribag Mining Company was entered into.

FORT WILLIAM DISTRICT

Resource Road — Savant Lake southerly to Ignace on Highway 17:

This Resource Road will eventually become an extension of Secondary Highway 599 from Pickerel Crow to Savant Lake and this year saw the completion of two grading contracts covering the section from mile 28 to mile 39 south of Savant Lake. In addition, a crushed gravel contract was completed from Savant Lake to mile 25 south of Savant Lake.

A start was made on a contract at the southerly terminus of this road at Ignace by the awarding of a grading contract to construct the section from Ignace northerly for approximately 10.5 miles and work will continue in 1964 on this section.

In 1964 all the necessary grading contracts to complete this entire project of approximately 80 miles will be underway, ahead of the original anticipated schedule.

Resource Road — Spruce River Road, Highway 17 (east of Port Arthur) to Cheeseman Lake — approximately 74 miles:

This road is being constructed under the Resources Roads Agreement with the costs being shared equally between the Federal Government, the Provincial Government, and the Abitibi Power & Paper Company Limited.

Five miles were completed this year to bring the total mileage constructed to date of approximately 64.5 miles north from the origin of the highway on Highway 17 east of Port Arthur. A project is presently underway to complete this road project to mile 74 and this should be completed by early fall of 1964.

Resource Road — Lingman Lake Road — Central Patricia northerly:

During this year 15.3 miles of road were constructed from Central Patricia northerly and a further contract was let for an additional 12.7 miles for clearing to reach mile 28 north of Central Patricia.

In order to carry out winter works in this remote area, a steel and creosoted steel structure was erected over the Crown River at July Falls by day-labour forces.

Resources Roads, 1963-64

Financed Partially by the Province under the Federal-Provincial Roads-to-Resources Agreement

District	Location	Year Begun	Total Miles	Miles Compl. Prev. Yrs.	Miles Compl. 1963-64	Miles to Compl.
New Liskeard	Foleyet west	1958	34.0	34.0	.....	.....
Sudbury	Flack Lake Road	1963	38.0	.....	7.0	31.0
Sault Ste. Marie	Chapleau east	1958	26.0	26.0	.....	.....
Fort William	Nakina to Terrier Lake	1959	47.0	47.0	.....	.....
	Savant Lake to Hwy. 17	1959	80.0	35.5	11.0	33.5
	Hwy. 17 to vicinity of Cheeseman Lake	1959	74.5	59.5	5.0	10.0
	Central Patricia northerly	1962	.....	.....	15.3	.....
Kenora	Minaki south	1959	21.5	21.5	.....	.....
	TOTALS		321.0	223.5	38.3	74.5

Mining and Access Roads, 1963-64
Financed Partially by the Province

New Liskeard	Rusty Lake Mine Road	1963	21.0	(access road cost shared equally by Province and Mine)
Sault Ste. Marie	Stairs Exploration Company Road	1963	9.0	(access road cost shared equally by Province and Mine)
	Tribag Mining Company Road	1963	17.0	(access road cost shared equally by Province and Mine)

Forestry Roads, 1963-64

By an agreement entered into between the Federal and Provincial Governments under the Forestry Assistance Agreement dated January 1962, the Department of Highways, acting as an administrative agent on major road projects for the Provincial Department of Lands and Forests, completed the following:

District	Location	Year Begun	Total Miles	Miles Compl. Prev. Yrs.	Miles Compl. 1963-64	Miles to Compl.
Bancroft	From Alice Twp. Line to Ignace Lake	1962	13.0	13.0	.....	.....
Sault Ste. Marie	Dalton to Missanabie	1962	14.0	7.0	7.0	.....
Fort William	Northern Lights Lake Rd. end of Hwy. 588 to Northern Lights Lake	1961	28.6	24.0	4.6	.....
Kenora	Temple Twp. Line south for 6.2 miles	1963	6.3	.....	6.3	.....

Under the terms of the Forestry Assistance Agreement entered into January 1962, and extending for two years, the Department of Highways, as aforementioned, acted as agent for the Provincial Department of Lands and Forests in the constructing of major roads. However, the Department of Lands and Forests itself, under this Agreement, would be constructing roads of a minor nature and thus are presented in the Annual Report of the Department of Lands and Forests.

MUNICIPAL ROADS DIVISION

J. P. HOWARD, P.Eng., *Municipal Engineer*

The 1963 subsidizable expenditures by the municipalities increased by $22,000,000.00 over 1962 and by $108,767,000.00 over 1954, as shown in the following table:

Expansion of Aid to Municipalities (in $1,000's)

Year	Total Expenditure by Municipalities	Subsidies under The Highway Improvement Act	Development Road Expenditures	Total Aid
1954	$ 64,926	$32,787	$ 1,662	$34,449
1955	78,987	39,773	3,876	43,649
1956	92,048	46,003	4,732	50,735
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952
1959	124,391	62,362	7,880	70,292
1960	140,438	70,444	8,135	78,759
1961	142,010	71,542	7,786	79,328
1962	151,686	76,231	7,718	83,948
1963	173,693	88,041	11,109	99,150

SUBSIDIES SECTION

C. R. WILMOT, P.Eng., Subsidies Engineer

976 municipalities and 41 Indian reserves received subsidy under The Highway Improvement Act for expenditures made in 1963. The aggregate amounts were as follows:

Type of Municipality	Road Mileage	Approved Appropriations	Approved Expenditures	Subsidy
Metro. Toronto	356.3	$ 41,600,000	$ 41,507,652	$20,753,825
Counties*	9,188.8	40,258,400	36,470,286	19,784,038
Townships†	57,774.6	56,376,360	51,317,254	29,923,461
Urbans	9,914.2	57,447,813	44,397,369	17,580,312
TOTALS	77,233.9	$195,682,573	$173,692,561	$88,041,636

* Includes Suburban Commissions.
† Includes Improvement Districts and Indian Reserves.

METROPOLITAN TORONTO

(Municipality of Metropolitan Toronto Act)

The subsidizable expenditures made by Metropolitan Toronto were more than 1.3 greater than those of 1962. A breakdown of the 1963 expenditures follows:

	CONSTRUCTION	MAINTENANCE	TOTAL
Roads (winter control excepted)	$30,773,896	$2,487,071	$33,260,967
Bridges and culverts	6,756,673	149,024	6,905,697
Winter control	.....	1,340,986	1,340,986
TOTAL APPROVED EXPENDITURES	$37,530,569	$3,977,081	$41,507,650

The following works formed a major part of the expenditures in 1963:

Structures completed		13
Structures under construction		4
Elevated Expressway (F. G. Gardiner)		
	Portion completed	0.04 miles
	Under construction	1.83 "
Road construction—	Completed (Don Valley Parkway, Eglinton Ave. to Law Ave.)	2.00 "
	Under construction (Don Mills Road Extension and Don Valley Parkway)	6.31 "
Pavement widening —completed		6.55 "
Resurfacing of existing pavement		6.30 "
Intersection improvements		17.00
Major repairs to bridges		4.00

COUNTY ROADS

(Part VII, The Highway Improvement Act)

The 1963 expenditures on county and suburban roads were about $1.5 million above those of 1962. A breakdown follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$19,190,921	$ 9,159,451	$28,350,372
Bridges and culverts	4,865,356	297,626	5,162,982
Winter control	.....	2,956,931	2,956,931
Total Approved Expenditures	$24,056,277	$12,414,008	$36,470,285

Some understanding of the type and magnitude of the work represented by these figures can be gained from the following summary of the principal items of work performed by the counties and suburban commissions.

Construction Items

1. Roads:		
	New or rebuilt gravel and stone	502 miles
	Low cost bituminous surfaces	158 "
	High cost bituminous surfaces	154 "
	Graded to standard cross-section	363 "
2. Bridges and culverts:		
	Bridges (10′ span and over) — Concrete, 81; Steel, 8; Timber, 2. Total	91
	Culverts (under 10′ span) — Concrete, 49; Metal Arch, 31. Total	80
	Pipe culverts	3,188

Maintenance Items

1. Surface maintenance and drainage:		
	Roadside ditching	215 miles
	Bituminous surface treatment	979 "
	Dust laying with oil	488 "
	Dust laying with calcium chloride	2,070 "
	Clay-gravel stabilization	6 "
	Resurface — Crushed gravel	744,171 cu. yds.
	Crushed stone	71,437 tons
2. Winter control —	Snow removed	8,650 miles
	Snow fence erected	1,563 "

3. Weed and brush control — Spraying	6,694	"
Cutting	4,705	"
4. Bridges repaired	110	
Culverts repaired	558	

COUNTY SUBURBAN ROADS

(Part VIII, The Highway Improvement Act)

Thirty-four cities and separated towns in the province have joined their neighbouring counties to form Suburban Roads Commissions. These commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1963 mileages, expenditures and government aid are shown below.

County	Suburban Road Commission	Mileage	Approved Expenditure	Government Subsidy
Brant	Brantford	61.5	$ 230,453.74	$ 122,829.19
Carleton	Ottawa	108.7	1,113,508.51	570,630.11
Elgin	St. Thomas	25.0	43,697.23	21,904.08
Essex	Riverside	4.0	43,838.14	25,751.38
	Windsor	49.0	601,982.03	307,422.74
Frontenac	Kingston	41.9	170,472.32	89,815.01
Grey	Owen Sound	34.7	53,865.30	27,307.11
Hastings	Belleville	16.2	141,433.32	102,524.88
Kent	Chatham	27.1	74,599.10	37,826.15
Lambton	Sarnia	25.5	233,069.68	122,014.51
Lanark	Smiths Falls	11.6	10,580.68	5,470.32
Leeds and Grenville	Brockville	18.4	41,071.55	20,743.78
	Gananoque	9.1	12,941.77	6,490.77
	Prescott	2.8	12,026.55	6,038.60
	Smiths Falls	5.2	9,902.42	5,099.36
Lincoln	St. Catharines	46.8	276,136.77	145,881.43
Middlesex	London	65.6	315,971.58	161,763.20
Northumberland and Durham	Trenton	12.7	26,643.87	13,346.19
Ontario	Oshawa	30.7	263,893.75	135,584.95
Oxford	Ingersoll	4.5	2,762.35	1,391.09
	Woodstock	11.0	18,598.36	9,354.53
Perth	St. Mary's	6.1	18,538.52	9,269.26
	Stratford	23.6	47,925.11	23,967.96
Peterborough	Peterborough	46.5	179,852.32	91,809.48
Simcoe	Barrie	18.2	87,084.26	47,604.78
Stormont, Dundas and Glengarry	Cornwall	61.0	123,690.64	64,470.28
Waterloo	Galt	33.9	123,098.58	64,189.73
	Kitchener	60.1	455,442.21	299,638.29
	Waterloo	23.0	55,720.30	28,361.44
Welland	Niagara Falls	27.8	257,395.48	139,464.86
	Welland	16.4	158,067.48	84,882.96
Wellington	Guelph	37.5	78,699.38	39,472.05
Wentworth	Hamilton	159.5	624,191.91	318,146.93
York	Toronto-York	201.0	2,352,005.51	1,222,919.61
Totals		1,326.6	$8,259,160.72	$4,373,387.01

INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

574 townships, 19 improvement districts and 41 Indian reserves received aid under this part of the Act in 1963. The expenditures made by these 634 road authorities totalled as follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$18,339,536	$19,657,727	$37,997,263
Bridges and culverts	6,422,892	843,864	7,266,756
Winter control	.....	6,053,233	6,053,233
Total Approved Expenditures	$24,762,428	$26,554,824	$51,317,252

These expenditures provided for the major items of work shown below:

Construction Items

1. Roads:	
New or rebuilt gravel and stone surfaces	890 miles
Low cost bituminous surfaces	302 "
High cost bituminous surfaces	97 "
Graded to standard cross-section	1,513 "
2. Bridges and culverts:	
Bridges (10′ span or over) — Concrete, 155; Steel, 27; Timber 28. Total	210
Culverts (under 10′ span) — Concrete, 132; Metal Arch, 318; Timber, 80. Total	530
Pipe culverts installed	7,180

Maintenance Items

1. Surface maintenance and drainage:	
Roadside ditching	1,886 miles
Bituminous surface treatment	536 "
Dust laying — with oil	2,310 "
with calcium chloride	8,483 "
Resurfacing — crushed gravel	2,498,254 cu. yds.
crushed stone	476,308 tons
pit-run gravel	1,089,945 cu. yds.
2. Winter control — Snow removed	50,319 miles
Snow fence erected	2,916 "
3. Weed and brush control — By spraying	18,958 "
By cutting	26,859 "
4. Bridges repaired	731
Culverts repaired	4,870

CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

In keeping with the upward trend of expenditures made by the counties and townships, the 1963 subsidized expenditures of the 32 cities, 7 separated towns, 150 towns and 157 villages rose some $4.2 million above their 1962 expenditures. A breakdown of these expenditures follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$17,710,849	$16,570,788	$34,281,637
Bridges and culverts	1,960,307	740,857	2,701,164
Winter control	.....	7,414,566	7,414,566
Total Approved Expenditures	$19,671,156	$24,726,211	$44,397,367

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendix.

DIRECT EXPENDITURES SECTION

P. D. PATTERSON, P.Eng., Direct Expenditures Engineer

DEVELOPMENT ROADS

(Part XI, The Highway Improvement Act)

A total of 1,088.6 miles of roads under the jurisdiction of the councils of townships and counties were the subject of 202 development road designations upon which $11,108,753.48 were expended during the fiscal year.

Some 42 new designations were made with a total mileage of 197.18. Improvement operations were completed on 56 projects aggregating 354.64 miles and the designations revoked.

A total of 152 projects were carried forward to the 1964 program.

Effective during the year were adjustments in subsidy to townships on road expenditures carried out under normal subsidy where the need was demonstrated pursuant to a formula. Warrants for development road aid were established in keeping with the subsidy formula for townships by which requests for such aid are appraised. The County Road Needs Study was initiated which, when completed, will provide a basis for development road aid to county road systems.

Locations, mileages and expenditures are shown in the appendix.

ROADS IN UNINCORPORATED TERRITORY

(Part XII, The Highway Improvement Act)

Under this part of the Act sparsely settled areas of the province, where incorporation is not feasible, benefit from assistance toward the maintenance and improvement of roads and bridges, aid is rendered to Statute Labour Boards and groups of settlers. The amount of the contribution is at least equivalent to the value of the statute labour. In the case of bridges and culverts the contribution may be to the extent of 80 to 100 per cent of the cost and in special circumstances where the local contribution would be insignificant the entire project is carried out at the expense of the department.

The distribution of aid by districts is listed in the following table:

SUMMARY OF UNINCORPORATED TOWNSHIPS EXPENDITURES IN THE FISCAL YEAR 1963-1964

	Municipal District	Value of Statute Labour on Other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10	Nipissing	$ 2,712.12	$ 68,682.69	$ 71,394.81	96
11	Huntsville	18,188.21	70,498.17	88,686.38	79
12	Parry Sound	74,092.31	282,774.35	356,866.66	79
13	Nipissing	59,412.05	167,881.32	227,293.37	74
14	Temiskaming and Cochrane South	43,969.41	86,222.60	130,192.01	66
16	Cochrane North	67,726.24	150,289.70	218,015.94	69
17	Sudbury	59,471.32	171,281.72	230,753.04	74
18	Algoma	41,082.76	101,651.86	142,734.62	71
19	Thunder Bay	63,499.78	170,326.68	233,826.46	73
20	Kenora and Rainy River	55,367.43	107,230.19	162,597.62	66
	Totals	$485,521.63	$1,376,839.28	$1,862,360.91	74

SIDEWALK CONSTRUCTION

(Under Part XIII, Section 100, The Highway Improvement Act, 1960)

A township may, with the approval of the Minister and the county, apply for a 50 per cent grant toward the cost of construction of sidewalks on county roads. Payments to townships during the year under this section were as follows:

Middleton Township	Hamlet of Courtland (County Road No. 1)	$ 1,800.36
Clarence Township	Police Village of Clarence Creek (County Roads No. 8 and 1)	779.95
Russell Township	Police Village of Russell (County Roads No. 6 and 3)	1,152.48
King Township	Police Village of King City (County Road No. 11)	1,950.42
Cumberland Township	Police Village of Sarsfield (County Road No. 1)	810.97
Osgoode Township	Police Villages of Osgoode and Metcalfe (County Roads No. 11 and 5)	1,020.28
Wilmot Township	Village of Dundee (County Road No. 6)	613.20
Kitley Township	Police Village of Jasper (County Road No. 16)	140.09
Loughborough Township	Hamlet of Sydenham (County Road No. 5)	445.27
Mountain Township	Police Village of South Mountain (County Road No. 3)	1,450.06
TOTAL		$10,163.08

PLANS APPROVALS

B. R. HEAVYSEGE, P.Eng., Plans Approval Engineer

Plans approved during the year were as follows:

County Development Roads	16 plans	74.10 miles
Township Development Roads	23 plans	71.49 "
County By-law Construction	162 plans	281.26 "
Township By-law Construction	15 plans	13.29 "
TOTALS	216 plans	440.14 miles

The above total is an increase of 94 miles over last year's approvals. The increase is due mainly to the fact that, on development roads, the tendency is towards unit price contracts requiring pre-engineering and plan-profiles which are approved before contract calls.

Most of the plans on by-law work are now approved at the district level but considerable time is required in examining development road plans and contract documents prior to contract reviews and giving final approval after recommended changes have been effected as a result of the review meetings.

Consulting engineering firms have been doing much of the development road pre-engineering, preparation of contract documents and contract supervision and with 22 firms involved in this work, a great deal of liaison was required in getting the work done to our standards. There has been a gratifying improvement in the work of most of the consultants working for us and the co-operation has been very good in most cases.

DISTRICT No. 1—CHATHAM

F. C. Brown, P.Eng., District Engineer

Construction

Concrete paving was completed on the north lanes of Highway 401 from County Road 10 to the Kent/Elgin County Line, a distance of 23 miles. The section of Highway 401 from Tilbury By-pass to Highway 21 was opened to traffic on October 25, 1963 and the remaining section of nine miles from Highway 21 to the Kent/Elgin County Line was opened September 21, 1963. On September 25, 1963, the first contract was awarded for paving of the south lanes of Highway 401, commencing at the easterly end of the Tilbury By-pass easterly for a distance of 7.85 miles. Fine grading and spreading of granular materials was carried on throughout the fall and early winter months with approximately 75% of this work being completed.

Reconstruction and asphalt paving of Highway 3 from Blenheim westerly for 10.2 miles was completed this year. Other major reconstruction and asphalt paving contracts completed include: Highway 7 from Arkona's south limits to Highway 21, 4.9 miles; Highway 18 from Leamington to Kingsville, 6.6 miles; from Grand Bend south to Highway 82, 9.15 miles. Reconstruction and paving in the village of Arkona on Highway 7 was started and completed this year.

This fiscal year's work also included a new bridge over Wigle Creek on Highway 18, 1.2 miles west of Kingsville and a new bridge over Puce River on Highway 98, four miles west of South Woodslee. Work was started on a new bridge in the village of Grand Bend on Highway 21, including reconstruction of Highways 21 and 81 through the village. In conjunction with a proposed interchange to be constructed at the junction of Highway 402 and Modeland Road east of Sarnia, reconstruction of Highway 7 for a distance of one mile east of the Wawanosh Drain was started; this work including widening of the existing structure over the Wawanosh Drain to provide for a four-lane roadway designed to flare into the dual section of Highway 402 when the Modeland Road Interchange has been completed. Work was also started on the Indian Road underpass at Highway 402. This structure will enable traffic to move direct between the chemical valley in South Sarnia to the heavily populated urban area north of 402 via Churchill Road and the newly constructed Indian Road. This will reduce traffic congestion considerably in the Sarnia business area during peak traffic hours.

At the easterly end of the Tilbury By-pass a 333-foot long structure was completed to carry Highway 2 traffic over 401. Also completed this year was a new bridge on Highway 21 over the Aux Sable River (The Cut) situated 1.5 miles north from junction of Highways 21 and 82. Work was also started to improve the temporary access into Chatham from Highway 401 via the Bloomfield Road, at this road's junction with Highway 2 at the Chatham west limits.

A $3,000,000.00 reconstruction job on Development Road 471 (now Highway 80) from Courtright easterly to Highway 79 was completed this year, involving a distance of 31 miles. This work started in 1958, with the final asphalt paving contract, 12.9 miles long, being completed this year.

Maintenance

General maintenance operations were carried out in the district during 1963-64. There were sixteen (16) contracts awarded and carried out under the supervision of the Maintenance Section. Tender value for these contracts totalled $181,851.00. Three hot-mix patching contracts totalling 6,580 tons were completed. Four supply-and-place contracts for 5/8" crushed stone or gravel provided 15,046 tons of material for shoulder maintenance at various locations. Some 982 stumps were removed under a stump removal contract which was called late in the summer. Two seeding and mulching contracts were called to complete the reconstruction of Highway 3 from Blenheim to Ouvry, a distance of 9.7 miles. Under these two contracts, 262,839 square yards were seeded and mulched.

A ten-bay metal patrol garage was completed at Kent Centre, adjacent to Highway 401. A new patrol was established at this location this year to service Highway 401. When additional mileage on Highway 401 is completed, a second patrol will be organized at this yard. A five-bay metal patrol garage was completed this year at Reece's Corners on Highway 7. Four standard salt sheds were constructed by district forces.

The district's two-way radio system was enlarged by the addition of a new base station at Kent Centre, on Highway 401, and the installation for winter service, of four units in our larger trucks. Gas pumps were installed at the district yard and at the Kent Centre patrol yard.

The electrical crew was again extremely busy. Aside from the normal work of wiring required in salt sheds and other patrol buildings, there was a great demand for temporary traffic signals and illumination in connection with construction contracts. Three new traffic signals were installed and illumination was completed at four intersections. There were numerous flasher warning lights installed at various locations. Street lighting of the Jackson Park, Highway 3B south approach into Windsor, was completed under contract 63-104. This contract was supervised by the electrical crew.

There were 6,105 signs erected by district forces this fiscal year. Zone painting was carried out on 832 miles of highway, requiring 7,728 gallons of paint.

Although the district had a fairly open winter, the amount of salt and sand used did not vary much from that used the previous winter. Heavier snow conditions were prevalent in the Grand Bend, Sarnia area, than were encountered in the Windsor, Chatham section of the district.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
2	C. & O.	Township of Sandwich South, County of Essex	2 flash. lights, bell
2	C.P.R.	Township of Chatham, County of Kent	2 flash. lights, bell
3	C. & O.	Township of Gosfield South, County of Essex	2 flash. lights, bell
18	C. & O.	Township of Gosfield South, County of Essex	2 flash. lights, bell
79	C.N.R.	Peter St., Bothwell	2 short arm, bell
98	N.Y.C.	Township of Tilbury West, County of Essex	2 flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1963–64	Tons Placed 1963–64
3	Mountford Street, Blenheim, to Cedar Springs	4.6	1962		4.6	20,300
3	Cedar Springs to Ouvry	5.6	1963		5.6	17,068
7	Arkona south to Hwy. 22	4.9	1963		4.9	8,812
7	Village of Arkona	0.84	1963		0.84	4,167
7	Wawanosh drain 2 mi. east of Sarnia	1.18	1963			71
18	Leamington to Kingsville	6.6	1962		6.6	23,405
18	Wigle Creek 1.2 mi. west of Kingsville	0.28	1963			813
21	Intersection Hwy. 82 to Grand Bend south limits	9.15	1963		9.15	18,257
98	Puce River 3.9 mi. east of Hwy. 114	0.30	1963		0.30	831
401	Structure and ramps at Bloomfield Road, Kent Centre and Bloomfield Road interchange legs	1.46	1962	0.58	1.46	1,320
401	Structure, deck and ramps at Harwich/Howard town line	0.37	1962	0.28	0.37	3,254
401	Interchange at east junction with Hwy. 2	0.58	1962	0.39	0.58	5,338
	TOTALS	35.86		1.25	34.40	103,636

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed 1963–64
	Various	965

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
2	Chatham east for 6 mi.		
2	West junction of Hwys. 2 and 401 to Merlin town line		
40	Wallaceburg south for 11 mi.	3.0	2,848
3	Maidstone to 4 mi. west of Leamington		
107	Ruthven to Union	1.2	1,148
7	Junction of Hwys. 7 and 22 to junction of Hwys. 7 and 21		
79	Watford to 6.2 mi. north of Bothwell	2.5	2,584
	TOTALS	6.7	6,580

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
7	Wawanosh drain 2 mi. east of Sarnia	1963		Reinforced concrete, rigid frame
18	Wigle Creek 1.2 mi. west of Kingsville	1963	1963	Reinforced concrete, rigid frame
21	Aux Sable River bridge (The Cut bridge)	1962	1963	Reinforced concrete, steel beam
98	Puce River bridge 3.9 mi. east of Hwy. 114	1963	1963	Reinforced concrete, rigid frame
401	Interchange at east junction with Hwy. 2	1962	1963	Reinforced concrete, steel beam
401	Harwich bridge No. 1A, McGregor Creek tributary	1961	1963	Twin reinforced concrete, rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64	Pave. Width
401	Jct. Hwy. 401 with Hwy. 21	0.66	1962	0.66	748	16 Ft.
401	Jct. Hwy. 401 with Howard/Harwich town line	0.53	1962	0.53	562	16 Ft.
401	Jct. Hwy. 401 with Communication Road at Kent Centre, and Jct. Hwy. 401 with Bloomfield sideroad	0.96	1962	0.96	1,166	16 Ft.
401	Jct. Hwy. 401 with Hwy. 2 east of Tilbury	0.25	1962	0.25	314	16 Ft.
18	Leamington to Kingsville	6.27	1962	6.27	22,234	24 Ft.
7	Village of Arkona	0.84	1963	0.84	4,167	22–42 Ft.
	Totals	9.51		9.51	29,191	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Sq. Yds. Placed 1963–64	Pave. Width
401	Kent-Elgin county line to Hwy. 21	9.77	1962	9.77	138,486	24 Ft.
401	Hwy. 21, westerly to midway between Hoffman sideroad and Communication Road at Kent Centre	10.93	1962	10.93	162,665	24 Ft.
401	From midway between Hoffman sideroad and Communication Road, Harwich Twp., to midway between Centre sideroad and Drake sideroad, Raleigh Twp.	9.93	1962	3.59	58,895	24 Ft.
	Totals	30.63		24.29	360,046	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
3	Mountford Street, Blenheim, to Cedar Springs	4.6	10,247
3	Cedar Springs to Ouvry	5.6	7,707
7	Village of Arkona	0.84	818
7	Arkona south to Hwy. 22	4.9	4,788
18	Leamington to Kingsville	6.27	6,806
18	Wigle Creek 1.2 mi. west of Kingsville	0.28	414
21	Intersection with Hwy. 82 to Grand Bend south limits	9.14	12,152
98	Puce River 3.9 mi. east of Hwy. 114	0.30	480
401	Kent-Elgin line to Hwy. 21	9.77	9,280
401	Hwy. 21 to Kent Centre interchange	10.93	53,994
401	Interchange at Howard/Harwich town line	0.37	2,328
401	Interchange at Hwy. 2 east of Tilbury	0.58	2,732
2	Chatham to Louisville	5	3,503
3	Leamington to Wheatley	8	3,991
79	Watford to Jct. Hwy. 7	3	2,500
98	Tilbury to Jct. Hwys. 2 and 98	32	5,052
	Totals	101.58	126,792

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
3	Wheatley east for 6 mi.	6	3,507

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1963–64
3	Mountford Street, Blenheim, to Cedar Springs	4.6	1962	.....	4.6
3	Cedar Springs to Ouvry	5.6	1963	.....	5.6
7	Village of Arkona	0.84	1963	.....	0.84
7, 402	Wawanosh drain 2 mi. east of Sarnia	1.18	1963	.....	0.50
18	Leamington to Kingsville	6.27	1962	.....	6.27
18	Wigle Creek 1.2 mi. west of Kingsville	0.28	1963	.....	0.28
21	Intersection with Hwy. 82 to Grand Bend south limits	9.14	1962	8.14	1.00
21, 81	Village of Grand Bend	1.13	1963	.....	1.00
39	From Jct. Hwy. 2 through the village of Belle River	2.84	1963	.....	0.28
98	Puce River 3.9 mi. east of Hwy. 114	0.30	1963	.....	0.30
401	Interchange at Hwy. 401 and Hwy. 2 east of Tilbury	0.58	1962	.....	0.58
	TOTALS	32.76		8.14	21.25

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
3	Mountford Street, Blenheim, to Cedar Springs	4.6	1962	4.6	80,156
3	Cedar Springs to Ouvry	5.6	1963	5.6	115,764
7	Village of Arkona	0.84	1963	0.84	20,494
7, 402	Wawanosh drain 2 mi. east of Sarnia	1.18	1963	0.42	16,399
18	Leamington to Kingsville	6.27	1962	6.27	82,375
18	Wigle Creek 1.2 mi. west of Kingsville	0.28	1963	0.28	8,910
21	Intersection with Hwy. 82 to Grand Bend south limits	9.14	1962	1.00	36,329
21, 81	Village of Grand Bend	1.13	1963	1.00	28,298
39	From junction of Hwy. 2 through the village of Belle River	2.84	1963	0.28	10,571
98	Puce River 3.9 mi. east of Hwy. 114	0.30	1963	0.30	4,066
401	Kent-Elgin line to Hwy. 21	9.77	1962	7.91	215,779
401	Hwy. 21 to Kent Centre interchange	10.93	1962	1.53	26,309
401	1.08 mi. east of Hwy. 2 to the Dillon sideroad	7.85	1963	5.02	96,029
401	Interchange at Howard/Harwich town line	0.37	1962	0.37	30,210
401	Interchange at Hwy. 401 and Hwy. 2 east of Tilbury	0.58	1962	0.58	41,505
	TOTALS	61.68		36.00	813,194

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
18	Patrol Yard (Harrow)	Salt shed	1963	1963
21	Patrol Yard (Hank's Corners)	Salt shed	1963	1963
40	Patrol Yard (Courtright)	Salt shed	1963	1963
401	Patrol Yard (Kent Centre)	Salt shed	1963	1963
401	Patrol Yard (Kent Centre)	10-bay patrol garage	1963	1963
7	Patrol Yard (Reece's Corners)	5-bay patrol garage	1963	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	3		
Off-road parks maintained	9		
Roads snowploughed and kept open, King's Highways	18		723
Roadside picnic places maintained	54		
Routine maintenance, King's Highways			723
Salt for de-icing roads (raw)		6,743	723
Salt in sand, stockpiled		399	
Sand for winter maintenance		3,710	
Scale houses maintained	3		
Seeding by department's forces (acres)	445		
Shrubs received and planted this year	3,990		
Signs erected or replaced	6,105		
Snow fence erected, dismantled, stored			40
Traffic lights installed this year	3		
Weed control (gals.)	995		742
Zone painting on King's Highways (gals.)	7,728		832

DISTRICT No. 2—LONDON

H. C. Dernier, P.Eng., District Engineer

Construction

The most significant event in London District during the fiscal year 1963–1964 was the completion of paving the west-bound lanes of Highway 401 from Highway 4 to Chatham District boundary. This made possible (coincident with similar work in the Chatham District) the opening of this Highway in late October, thus providing a third through east-west route between London and Windsor.

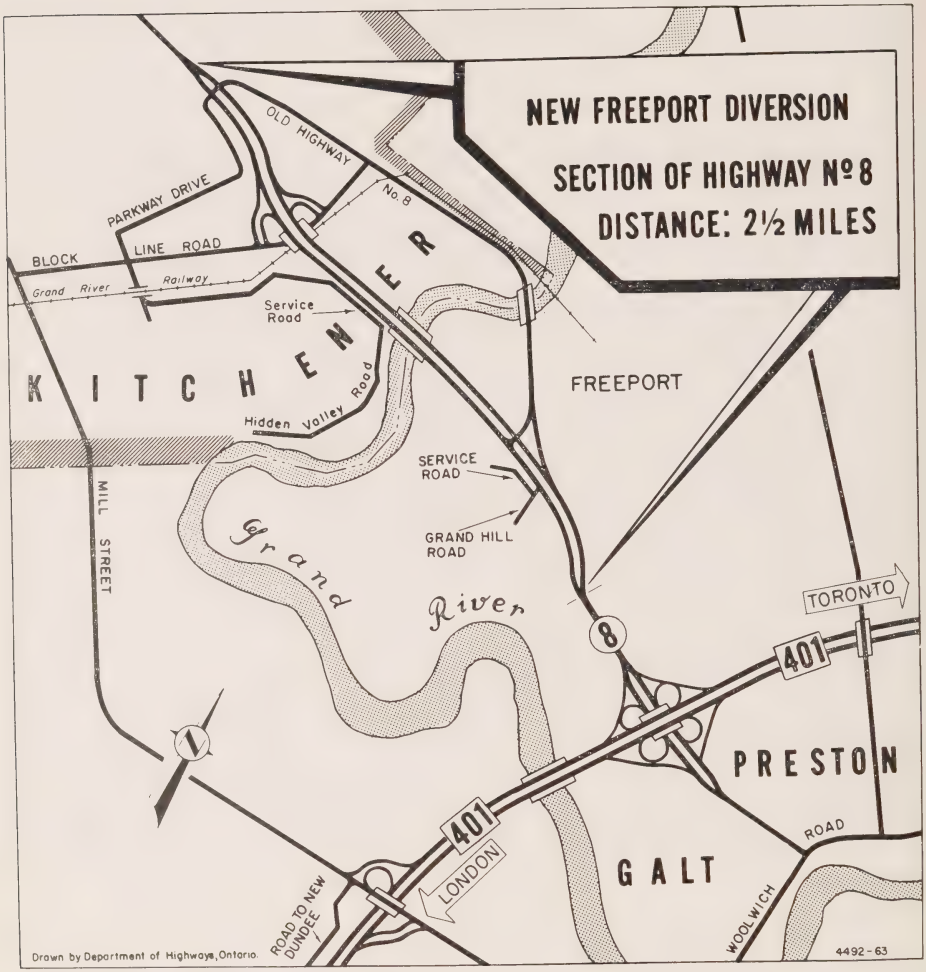


South End of Freeport Diversion—Highways 8 and 401, near Kitchener (London District).

All contract work which was started during the previous fiscal year was completed in 1963–1964. In addition, five new contracts were awarded and completed during the year. Nine contracts were started, to be completed in 1964–1965.

The new methods, or procedures introduced, were the letting of contracts for seeding and mulching as opposed to doing this work by Department of Highways forces. Some "bugs" were encountered in having this work done by contract, but it is expected that these will largely be eliminated when the work is incorporated into the general grading and paving contracts.

The other new method was the use of a skid attached to the paver which actuated electronically controlled screed adjustments to control resurfacing work. Some difficulties were encountered but the resulting job was somewhat better than the average result obtained by manual control.


NEW FREEPORT DIVERSION
SECTION OF HIGHWAY Nº 8
DISTANCE: 2½ MILES
OLD HIGHWAY
No. 8
PARKWAY DRIVE
BLOCK LINE ROAD
Grand River Railway
Service Road
KITCHENER
Hidden Valley Road
FREEPORT
SERVICE ROAD
GRAND HILL ROAD
MILL STREET
Grand River
TORONTO
401
8
1
PRESTON
401
LONDON
GALT
ROAD
WOOLWICH
ROAD TO NEW DUNDEE
Drawn by Department of Highways, Ontario.
4492-63

Maintenance

Routine summer and winter maintenance was carried out as in previous years.

The winter of 1963–1964 was much milder, with less snowfall than the winter of 1962–1963. It is of interest to note that the amount of salt applied as raw chemical was less in 1963–1964 by approximately 42 per cent, and sand was less by about 5½ per cent in spite of some increased mileage.

The usual number of crushed gravel and winter sand contracts were let and completed.

Two new patrol garages were constructed as listed elsewhere in this report.

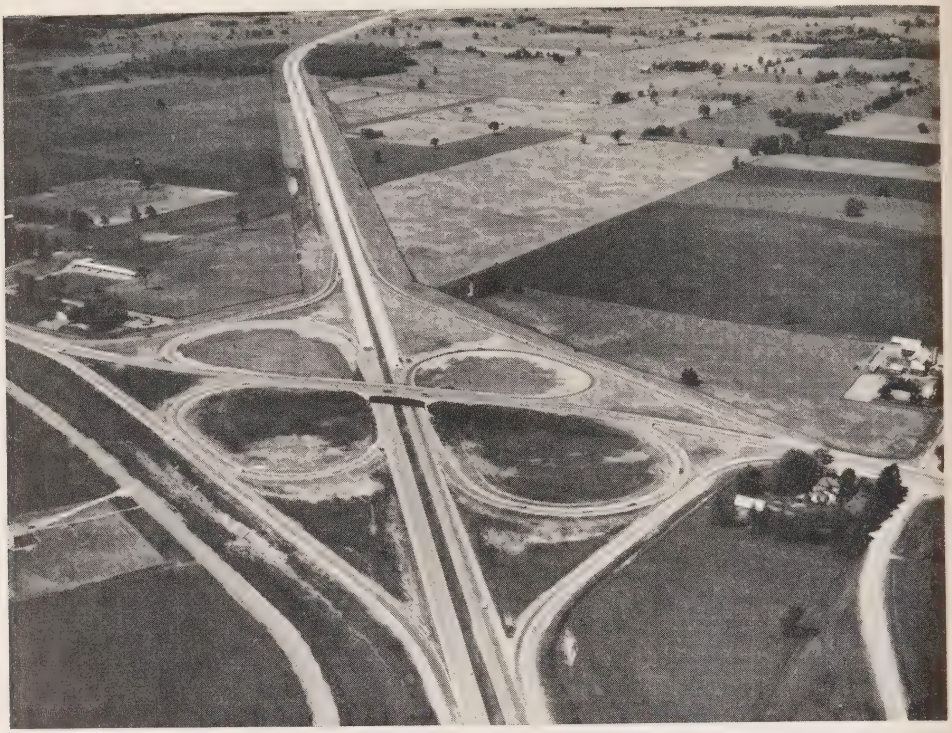
No new methods or procedures were employed.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
4	L. & P.S.	South of St. Thomas	2 flash. lights, bell
4	L. & P.S.	Port Stanley	2 flash. lights, bell
7	C.N.R.	Ailsa Craig	2 flash. lights, bell
7	C.N.R.	Near Ailsa Craig	2 flash. lights, bell
59	C.N.R.	Near Courtland	2 flash. lights, bell
81	C.N.R.	Town of Parkhill	2 short arm, bell
76	N.Y.C.	West Lorne	1 flash. light, bell; 1 short arm, bell
76	C. & O.	West Lorne	1 flash. light, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2	Horner's Creek Bridge west of Princeton	0.13	1962	0.13	622
3	Courtland to Tillsonburg	4.0	1963	4.0	17,722
3	Aylmer to St. Thomas	7.61	1962	3.35	17,355
3	Catfish Creek west of Aylmer	.20	1962	.20	976
3	Talbotville to Shedden	6.44	1963	3.74	14,256
4	0.6 mi. north of Calamity Corners to Ilderton County Road	4.41	1963	.62	3,341
4	St. John's Bridge at Arva	.19	1962	.19	2,488
4	From 3.4 to 4.8 mi. south of Hwy. 7 including structures at Medway Creek	1.4	1962	1.4	5,698
59	From 0.2 mi. south of Hwy. 3 southerly 7.5 mi. Part "B" Port Rowan sideroad southerly 2.7 mi.	10.2	1962	4.1	10,304
126	From .53 mi. south of Hwy. 401 northerly 3.64 mi., 0.12 mi. north of Hamilton Road	3.64	1963		11,015
401	Part "A" Culloden Road and Hwy. 401; Part "B" Sweaburg Road and Hwy. 401; Part "C" Hwy. 2 Eastwood and Hwy. 401		1963		727
401	Middlesex County Road 15A underpass, 3 mi. west of Hwy. 4, including north and south service roads	1.94	1962	1.94	2,378
401	12.0 mi. west of Hwy. 4 westerly to Hwy. 76	12.45	1962		1,866
401	From Hwy. 76 westerly to Elgin-Kent County line	9.42	1962		1,439
401	Currie Road interchange 6.8 mi. east of Hwy. 76	0.35	1962	0.35	3,069
	Totals	62.38		20.02	93,256



New 25-mile section of Highway 401 between Highways 4 and 76 (London District).

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
81	Hwy. 22 to Hwy. 7*	12.56	39,228	1,254

* Contract carried out by Stratford District.

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
59	Woodstock to Norwich	18.5	4,004
401	From 0.67 mi. west of Hwy. 19 westerly 7.21 mi.	3.89	21,952
401	From 1.65 mi. west of Putnam Road westerly 5.36 mi. and 0.9 mi. at Highbury Avenue interchange	2.63	A: 22,643
	Part "B" from 7.01 mi. west of Putnam Road to Hwy. 4, excluding 0.9 mi. at Highbury Avenue interchange	.....	B: 3,426
2	Princeton to Paris	6.5	1,993
3	Shedden to New Glasgow	21.0	1,226
7	East junction of Hwy. 81 to Hwy. 4	16.0	3,732
	TOTALS	68.52	58,976

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
59	Langton southerly to County Road 9, Norfolk County	11.0	33,266	1,621.96

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
2	Horner's Creek 1 mi. west of Princeton	1962	1963	Beam and slab
4	St. John's Bridge at Arva	1962	1963	Beam and slab
4	Medway Creek structures at Birr — 2 structures approximately 1 mi. apart	1962	1963	Rigid frames
73	Catfish Creek Bridge at Port Bruce	1963	.....	Beam and slab
126	Commissioner's Road underpass (Highbury Avenue extension)	1963	1963	Beam and slab

Concrete Pavement

Hwy. No.	Location	Totals Miles	Work Begun	Miles Compl. 1963–64	Sq. Yds. Placed 1963–64	Pave. Width
126	From .53 mi. south of Hwy. 401 northerly 3.64 mi., 0.12 mi. north of Hamilton Road	3.64	1963	3.64	86,931	2/24 Ft.
401	From Hwy. 76 westerly to Elgin-Kent County line	9.42	1963	9.42	145,658	24 Ft.
401	From Hwy. 4 westerly to Southwold-Dunwich town line	12.07	1963	5.67	75,742	24 Ft.
	TOTALS	25.13		18.73	308,331	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
2	Horner's Creek Bridge west of Princeton	0.13	1,341
3	Courtland to Tillsonburg	4.0	63,300
3	Aylmer to St. Thomas	7.61	50,976
3	Catfish Creek west of Aylmer	.20	3,549
3	Talbotville to Shedden	4.19	61,600
4	0.6 mi. north of Calamity Corners to Ilderton County Road	1.72	27,000
4	St. John's Bridge at Arva	0.19	3,575
4	From 3.4 to 4.8 mi. south of Hwy. 7 including structures at Medway Creek	1.4	18,789
4	Exeter southerly to Centralia	1.98	28,500
24	From 2.4 mi. north of Hwy. 3 northerly 9.4 mi. to Scotland	1.87	25,547
59	From 0.2 mi. south of Hwy. 3 southerly 7.5 mi. (Part A)	7.5	42,623
	Port Rowan sideroad southerly 2.7 mi. (Part B)	2.7	1,174
73	Catfish Creek Bridge at Port Bruce	.22	1,300
126	From .53 mi. south of Hwy. 401 northerly 3.64 mi. 0.12 mi. north of Hamilton Road	3.14	125,777
401	From 0.67 mi. west of Hwy. 19 westerly	2.16	9,177
401	Part "A" — from 1.65 mi. west of Putnam Road westerly 5.36 mi. including 0.9 mi. at Highbury Avenue interchange	3.16	16,986
	Part "B" — from 7.01 mi. west of Putnam Road to Hwy. 4	12.73	3,678
401	Part "A" — Culloden Road and Hwy. 401	.....	1,171
	Part "B" — Sweaburg Road and Hwy. 401	.....	1,546
	Part "C" — Hwy. 2 interchange at Eastwood and Hwy. 401	.....	2,722
401	From Hwy. 4 westerly to Southwold-Dunwich town line south lanes	9.53	121,950
401	Middlesex County Road 15A underpass 3 mi. west of Hwy. 4 including north and south service road	.29	4,458
401	Currie Road interchange 6.8 mi. east of Hwy. 76	.35	14,427
401	From Hwy. 76 westerly to Elgin-Kent County line	9.42	135,448
	TOTALS	74.49	766,614

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
81	Junction of Hwy. 22 to Junction of Hwy. 7	12.56	10,761


NEW HIGHWAY No. 401 CONNECTION FOR LONDON (East end)
HIGHWAY No. 126
C.N.R.
Thames River
L O N D O N
2
Alternate Route
DUNDAS STREET
HIGHBURY AVENUE
2&4
WELLINGTON ROAD
POUND MILLS RD.
HAMILTON ROAD
New Highway No. 126
LAMBETH
126
COMMISSIONERS RD.
135
U.C.
NILESTOWN
4
401
WINDSOR
COUNTY RD. No. 37
TORONTO
L. & P. S. RWY.
74
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO
4858 - 63

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
2	Horner's Creek Bridge west of Princeton	.13	1962	.13
3	Courtland to Tillsonburg	4.0	1963	4.0
3	Aylmer to St. Thomas	7.61	1962	3.12
3	Talbotville to Shedden	6.44	1963	3.74
4	0.6 mi. north of Calamity Corners to Ilderton County Road	4.41	1963	2.91
4	From 3.4 mi. to 4.8 mi. south of Hwy. 7	1.4	1962	1.4
4	Exeter southerly to Centralia	3.42	1963	2.53
24	From 2.4 mi. north of Hwy. 3 northerly 9.4 mi. to Scotland	8.52	1963	3.66
73	Catfish Creek at Port Bruce	1.01	1963	.96
74	Dingman's Creek centre Branch Municipal drain 3.29 mi. south of Nilestown	.....	1963	.....
126	From 0.53 mi. south of Hwy. 401 northerly 3.28 mi. to Thames River	3.28	1962	.72
	TOTALS	40.22		23.17

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2	Horner's Creek Bridge west of Princeton	0.13	1962	0.13	1,478
3	Courtland to Tillsonburg	4.0	1963	4.0	55,825
3	Aylmer to St. Thomas	7.61	1962	3.12	56,816
3	Talbotville to Shedden	6.44	1963	4.96	173,820
4	0.6 mi. north of Calamith Corners to Ilderton County Road	4.41	1963	1.54	67,883
4	From 3.4 to 4.8 mi. south of Hwy. 7	1.4	1962	1.4	43,448
4	Exeter southerly to Centralia	3.42	1963	2.39	110,055
24	From 2.4 mi. north of Hwy. 3, northerly 9.4 mi. to Scotland	8.52	1963	2.81	57,790
73	Catfish Creek at Port Bruce	1.01	1963	.96	13,944
126	From 0.53 mi. south of Hwy. 401, northerly 3.28 mi. to Thames River	3.28	1962	.72	8,437
126	From .53 mi. south of Hwy. 401, northerly 3.64 mil, 0.12 mi. north of Hamilton Road	3.64	1963	3.64	189,055
401	From Hwy. 4 westerly to Southwold-Dunwich town line	12.07	1963	10.74	119,777
401	Currie Road interchange, 6.8 mi. east of Hwy. 76	.35	1962	.35	21,293
401	From Hwy. 76 westerly to the Elgin-Kent County line	9.42	1962	.47	12,474
401	Part "A" Culloden Road and Hwy. 401	.....	1963	.....	.....
401	Part "B" Sweaburg Road and Hwy. 401	.....	1963	.....	2,399
401	Part "C" two interchanges at Eastwood and Hwy. 401	.....	1963	.....	3,974
	TOTALS	65.70		37.23	938,468

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
59	3.0 mi. south of Courtland	Patrol garage	1963	1963
401	Junction Hwy. 401 and Elgin County Road 14	Patrol garage	1962	1963
	District Garage at Lambeth	Stockroom	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	60	.....
Off-road parks maintained	14	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	703
Roadside picnic places maintained	32	.....	.....
Routine maintenance, King's Highways	.....	.....	703
Salt for de-icing roads (raw)	.....	17,600	.....
Salt in sand, stockpiled	.....	2,580	.....
Sand for winter maintenance	.....	59,175	.....
Scale houses maintained	2	.....	.....
Seeding by department's forces (sq. yds.)	1,815,000	.....	.....
Shrubs received and planted this year	11,954	.....	.....
Signs erected or replaced	4,221	.....	.....
Snow fence erected, dismantled, stored	.....	.....	111
Snow hedges planted this year	2,300	.....	.....
Traffic lights installed this year	2	.....	.....
Weed control	.....	.....	428
Zone painting on King's Highways (gals.)	10,445	.....	710

DISTRICT No. 3—STRATFORD

L. D. BARRETT, P.Eng., District Engineer

Construction

The fiscal year 1963–1964 saw the completion of seven carry-over contracts and six new contracts. Work commenced on four contracts which will be carried over and completed during the 1964 construction season.

Grading, drainage, granular base, hot-mix paving and structures were completed at two locations on Highway 97, one mile east of Hickson and 1.25 miles west of Bright. Alignment improved and two old narrow structures replaced.



Winter maintenance on Highway 8 (Stratford District).

Grading, drainage, granular base and three concrete structures were completed on Highway 9 from Mildmay to Walkerton for 5.25 miles. A paving contract will be completed early in 1964.

Grading, drainage, granular base and hot-mix paving was completed on Highway 6, Arthur south for 5.25 miles with much improvement to alignment and riding surface.

Grading, drainage, granular base and hot-mix paving was completed on Highway 19 from the junction of Highway 7 to Uniondale. This contract also included 0.76 miles on Highway 7 resulting in great improvement to the intersection of Highways 7 and 19. Soils cement stabilization was used on this contract.

The Zetland Bridge and approaches was completed over the Maitland River on Highway 86, 1.6 miles west of Wingham.

Work was completed on an intersection improvement at Wagner's Corners, one mile south of St. Jacob's on Highway 85.

The work of removing and replacing an open footing culvert on Highway 83 approximately 2.8 miles west of Dashwood was completed.

Grading, drainage, granular base and hot mix paving was completed on the Freeport Diversion, Highway 8, from the north of Highway 401 to Fergus Avenue in the city of Kitchener for a distance of 2.56 miles. This contract included three service roads and extensive sewer and curb-and-gutter work and provides a controlled-access divided highway into the city of Kitchener with great improvement over the old narrow section of Highway 8.

Hot-mix paving including grading, drainage and granular base was completed at three locations on Highway 4, village of Londesborough, village of Blyth and paving on South Maitland Bridge and approaches for a distance of 1.22 miles. This contract included extensive street widening in the villages as well as extensive storm sewer and curb-and-gutter work.

Grading, drainage, granular base and hot-mix paving was completed on Highway 7 from the southwest limits of the city of Stratford southerly for 0.5 miles. This work included widening from a two lane to a four lane highway as well as channelization at the Embro Road and Highway 7, thus extending the wide pavement completed by the city of Stratford to the limit of the industrial area.

Grading, drainage, granular base and hot-mix paving was completed on Highway 8 from the north end of Highway 401 interchange at Preston north limits northerly for 1.31 miles. This contract included intersection improvement as well as curve revisions.

Granular base, drainage and hot-mix paving was completed on Highway 23 from Russeldale to one mile south of Mitchell for 5.34 miles.

The work of hot-mix paving (including grading, drainage and granular base at junction of Highways 4 and 9) was started on Highway 9 from Mildmay to Walkerton for 6.44 miles and will be completed during the 1964 construction season.

The work of grading, drainage, granular base and structure commenced on Highway 6 from Fergus north for 5.41 miles and will be completed during the 1964 construction season.

Work was started on grading, drainage, granular base and hot-mix paving on Highway 136 from intersection of Highway 24 northerly to east limits of Alton Village for 3.05 miles. Construction will be completed during the 1964 construction season.

Work was started on grading, drainage, granular base and hot-mix paving on Highway 86 in the village of Lucknow for 0.11 miles. Construction to be completed in the 1964 construction season.

Maintenance

Routine maintenance was carried out during the past year on 604 miles of highway.

The snow fall was exceptionally light this year with the result that there were considerable savings in salt and sand. The repairs to the road surface were light because of the mild winter and very little frost action.

Eight bridges were painted under a bridge-painting contract.

Some 31,544 tons of crushed gravel were applied to gravel surface by department forces. About 42 miles of gravel surface were primed with good results. A surface-treatment contract was completed for approximately 11 miles.

Two six-bay and one five-bay metal clad garages were built, for the Clinton, Harriston and Grand Bend patrols, and one salt shed was built for the St. Mary's patrol.

Approximately 851,840 square yards of seeding were carried out; 2,355 trees and 5,000 seedlings were planted and 180 trees were re-located with the tree saver.

Zone painting was carried out on 595 miles of paved road. Weed spraying was completed on 411 miles of highway with satisfactory results, while 2,951 signs were erected or replaced.

A contract for stump removal was let and 1,180 stumps were removed, 289 trees were removed by department forces and 30 off-road parks and 140 picnic sites were maintained.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
24	C.N.R.	City of Guelph	1 flash. light, bell
4	C.P.R.	Blyth	1 flash. light, bell
83	C.N.R.	Exeter	1 flash. light, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
6	Arthur southerly	5.25	1962	2.05	7,240
97	Horners Creek bridge, 1.25 mi. west of Bright	0.41	1963	0.41	1,125
97	Phelan Creek bridge, 1.50 mi. east of Hwy. 19 (Hickson)	0.39	1963	0.39	740
86	Zetland River bridge, 1.60 mi. west of Wingham	0.45	1963	0.45	1,280
85	Wagner's Corners, 1.0 mi. south of St. Jacob's	0.20	1962	0.20	520
83	Smokey Hollow culvert, 2.80 mi. west of Dashwood	0.05	1963	0.05	70
4, 9	Mildmay to Walkerton, including patrol yard at Walkerton	6.44	1963	4.00	16,920
23	Russeldale to 1.0 mi. south of Mitchell	5.34	1963	5.34	14,400
7, 19	Southwest limits of Stratford, southerly	0.50	1963	0.50	2,670
8	From north end of Hwy. 401 interchange at Preston north limits, northerly	1.31	1963	1.31	4,210
8	Freeport diversion from north of Hwy. 401 to Fergus Avenue, Kitchener	2.56	1963	2.56	32,582
4	Beane drain culvert, approximately 4.0 mi. south of Clinton	0.20	1963	0.20	105
19, 7	From Hwy. 7 southerly through Uniondale 3.77 mi. including 0.76 mi. of Hwy. 7 at Hwy. 19	4.53	1963	4.53	12,600
4	Londesborough and Blyth villages and paving of South Maitland bridge and approaches	1.22	1963	1.22	6,615
	TOTALS	28.85		23.21	101,077

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
9	Mildmay to Walkerton	5.3	15,663	356,70
19	Kintore to Uniondale	6.0	17,564	363.70
86	Junction of Hwy. 7 to 5 mi. east of Elmira	8.0	23,381	635.00
86	2 mi. west of Elmira to 6 mi. west of Elmira	4.0	12,212	315.00
97	Plattsville, easterly	6.0	17,866	343.20
136	Junction of Hwys. 24 and 136 to Orangeville	7.8	21,961	447.50
25	From Hwy. 24 southerly to Acton	5.4	15,665	447.10
4	Londesborough and Blyth villages and paving of South Maitland bridge and approaches	1.22	2,950	.....
	TOTALS	43.72	127,262	2,908.20

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
83	Russeldale to Exeter	11.30	38,500	1,593

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
9	Otter Creek bridge, north crossing	1962	1963	Reinforced concrete
9	Otter Creek bridge, south crossing	1962	1963	Reinforced concrete
9	Mildmay bridge over Otter Creek	1962	1963	Reinforced concrete
97	Phelan Creek 1.5 mi. east of Hwy. 19	1962	1963	Reinforced concrete
97	Horners Creek bridge, 1.25 mi. west of Bright	1962	1963	Reinforced concrete
86	Zetland bridge over Maitland River, 1.60 mi. west of Wingham	1962	1963	Reinforced concrete and structural steel

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
6	From Hwy. 9 at Arthur, southerly	5.25	3,485
6	From Hwy. 9 at Arthur, southerly	5.25	4,995
8	Freeport Diversion from north of Hwy. 401 to Fergus Avenue, Kitchener	2.56	15,804
7, 19	From Hwy. 7 southerly through Uniondale, 3.77 mi. including 0.76 mi. of Highway 7 at Hwy. 19	4.53	6,055
7, 19	From Hwy. 7 southerly through Uniondale 3.77 mi. including 0.76 mi. of Hwy. 7 at Hwy. 19	4.53	4,997
4, 9	Mildmay to Walkerton and D.H.O. Patrol Yard at Walkerton	2.44	3,900
23	From Russeldale to 1 mi. south of Mitchell	5.34	5,000
23	From Russeldale to 1 mi. south of Mitchell	5.34	4,290
	TOTALS	35.24	48,526

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
19	Kintore to Uniondale	5.8	248
25	Junction Hwys. 24 and 25 to Acton	5.35	987
86	Junction Hwys. 7 and 86 to Cox Creek	8.01	975
86	Waterloo-Wellington line to 5.27 mi. east of Dorking	3.75	2,635
97	0.14 mi. west of County Road No. 15 to Plattsville east limits	6.73	551
136	Junction Hwys. 24 and 136, Coulterville to Orangeville south limits	7.17	459
	Various locations — pavement patching	.....	18,167.55
	Various locations — shoulders		7,522.41
	TOTALS	36.81	31,544.96

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
6	Arthur, southerly	5.25	1962	2.05
19	Junction of Hwy. 7 to Uniondale	4.53	1962	4.53
97	Phelan Creek bridge, 1.5 mi. east of Hwy. 19 (Hickson)	0.39	1963	0.39
97	Horners Creek bridge, 1.25 mi. west of Bright	0.41	1963	0.41
86	Zetland River bridge, 1.60 mi. west of Wingham	0.45	1963	0.45
83	Smokey Hollow culvert, 2.80 mi. west of Dashwood	0.05	1963	0.05
8	From north end of Hwy. 401 interchange at Preston north limits, northerly	1.31	1963	1.31
8	Freeport Diversion from north of Hwy. 401 to Fergus Avenue, Kitchener	2.56	1963	2.56
4	Londesborough and Blyth villages and paving of South Maitland bridge and approaches	1.22	1963	1.22
4, 9	Mildmay to Walkerton and D.H.O. patrol yard at Walkerton	6.44	1963	6.44
23	From Russeldale to 1 mi. south of Mitchell	5.34	1963	5.34
7, 19	From south west limits of Stratford, southerly	0.50	1963	0.50
	TOTALS	28.45		25.25

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
6	Arthur, southerly	5.25	1962	2.05	97,900
97	Phelan Creek, 1.5 mi. east of Hwy. 19	0.39	1963	0.39	9,310
97	Horners Creek, 1.25 mi. west of Bright	0.41	1963	0.41	13,609
86	Zetland bridge over Maitland River, 1.60 mi. west of Wingham	0.45	1963	0.45	12,950
9, 4	Mildmay to Walkerton, including D.H.O. patrol yard, Walkerton	6.44	1963	6.44	38,600
8	From north end of Hwy. 401 interchange at Preston north limits, northerly	1.31	1963	1.31	18,455
8	Freeport Diversion from north of Hwy. 401 to Fergus Avenue, Kitchener	2.56	1963	2.56	252,050
7, 19	From Hwy. 7 southerly through Uniondale 3.77 mi., including 0.76 mi. of Hwy. 7 at Hwy. 19	4.53	1963	4.53	204,275
83	Smokey Hollow culvert, 2.80 mi. west of Dashwood	0.05	1963	0.05	1,335
23	Russeldale to 1.0 mi. south of Mitchell	5.34	1963	5.34	200,360
7, 19	Southwest limits of Stratford, southerly	0.50	1963	0.50	24,960
4	Londesborough and Blyth village, and paving of South Maitland bridge and approaches	1.22	1963	1.22	43,840
	TOTALS	28.45		25.25	917,644

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
9	Six-bay patrol shed, town of Harriston	Equipment storage	1963	1964
7	Standard salt shed, Prospect Hill, 6 mi. south of St. Mary's	Salt storage	1963	1963
8	Six-bay patrol shed, town of Clinton	Equipment storage	1962	1963
21	Five-bay patrol shed, junction Hwys. 21 and 83, Grand Bend	Equipment storage	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	8		
Calcium dust layer on gravel roads		222.8	
Development roads built	3		
Off-road parks maintained	30		
Roads snowploughed and kept open, King's Highways	18		625.64
Roadside picnic places maintained	140		
Routine maintenance, King's Highways	18		625.64
Salt for de-icing roads (raw)		12,160.50	
Salt in sand, stockpiled		2,292.59	
Sand for winter maintenance		57,785	
Scale houses maintained	1		
Seeding by department's forces (sq. yds.)	851,840		
Shrubs received and planted this year	10		
Signs erected or replaced	2,951		
Snow fence erected, dismantled, stored			170.00
Snow hedges planted this year			0.005
Weed control			411
Zone painting on King's Highways (gals.)	9,316		595
Trees planted	2,355		
Seedlings planted	5,000		
Trees relocated	180		

DISTRICT No. 4—HAMILTON

H. GREENLAND, P.Eng., District Engineer

Construction

The year 1963 marked the completion of two major projects. Highway 405 and the Garden City Skyway. The latter eliminates a serious bottleneck which has existed for many years at the Welland Ship Canal near St. Catharines. In addition, a section of Highway No. 403, approximately six miles in length from



Garden City Skyway (Hamilton District).

the Freeman High Speed Interchange to Longwood Road, was officially opened in the fall. A short section of Highway 6 was rebuilt to four-lane standards, providing a new connection for Highways 6 and 403 at Wolfe Island. Grading and paving was virtually completed on Highway 6 from Hagersville to Jarvis. Relocated Highway 8 between the Queen Elizabeth Way and St. David's was completed.

Grading, drainage, and paving was completed on Highway 20 from Highway 2 to Woodward Avenue, Hamilton, and from Stoney Creek traffic circle to King Street. A start was made on the elimination of a level railway crossing on Highway 5 at Transley. Approximately 0.5 miles of grading and a new structure over Little Creek was almost completed three miles west of Caledonia on Highway 54. Channelization work on Highway 57 at the junctions with Highways 20 and 3A and a half-mile of Highway 58 — Thorold south was reconstructed. Highway 102 from Main Street, Hamilton, to York Street, Dundas, was graded and paved to four lanes.

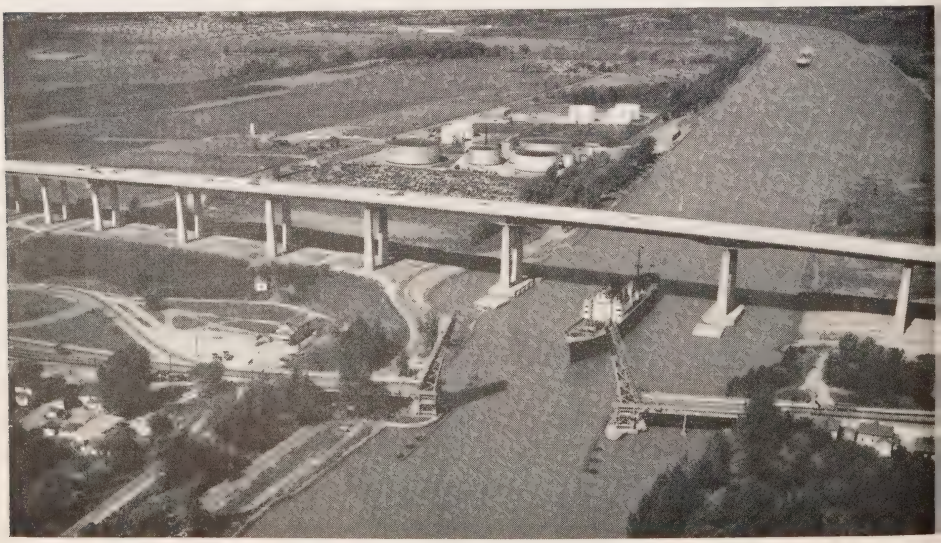
Work on a new structure and service roads at Niagara Street and the Queen Elizabeth Way was commenced. Seven miles of grading and 14 miles of surface treatment were completed on the Six Nations Indian Reserve under a joint project with the Federal Government.

A contract for service roads between Eastchester and Cushman Road was started along the Queen Elizabeth Way at St. Catharines.

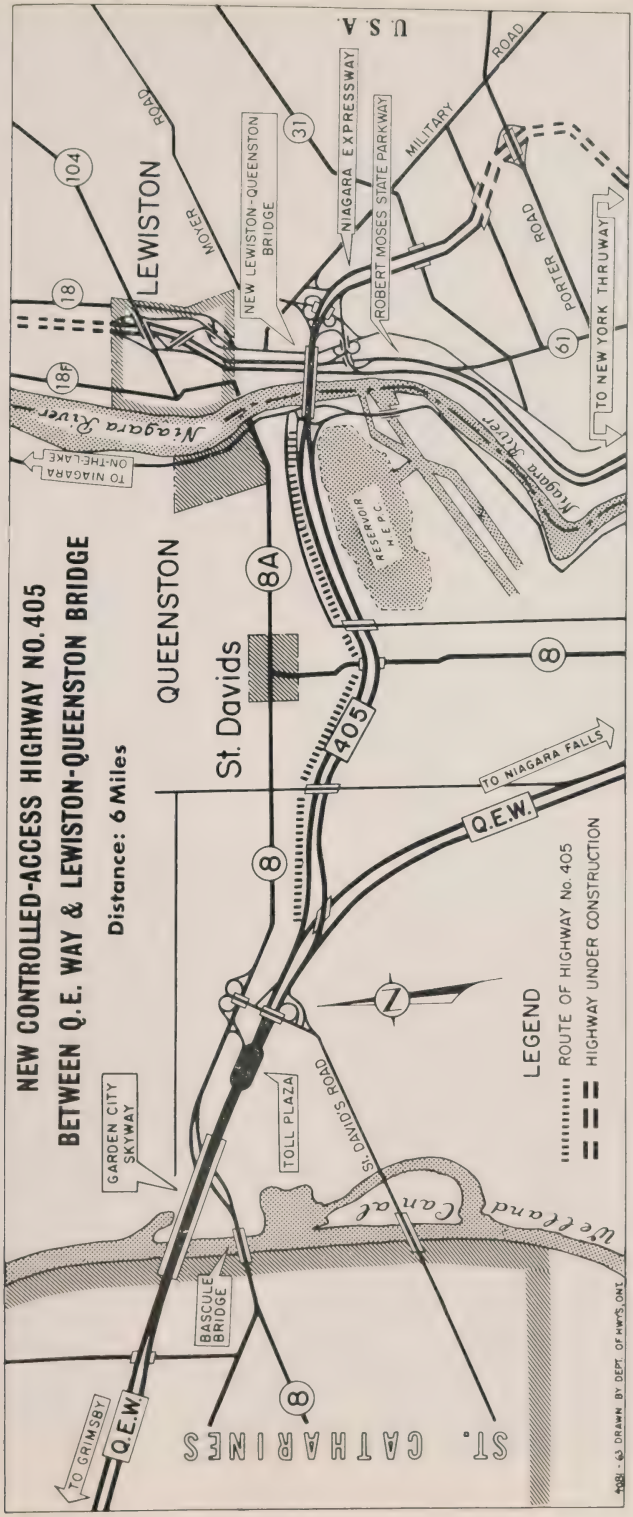
At nearby Vineland a start was made on the construction of service roads paralleling the Queen Elizabeth Way.

On Highway 401 the existing interchange at Campbellville was enlarged and deceleration lanes lengthened at Highways 8 and 25.

Two grading contracts totalling approximately four miles and including five structures were awarded and work commenced on Highway 403 at Brantford.



Garden City Skyway, showing old bridge on the Q.E.W. (Hamilton District).


NEW CONTROLLED-ACCESS HIGHWAY NO. 405
BETWEEN Q.E. WAY & LEWISTON-QUEENSTON BRIDGE
Distance: 6 Miles
QUEENSTON
St. Davids
LEWISTON
NEW LEWISTON-QUEENSTON BRIDGE
NIAGARA EXPRESSWAY
ROBERT MOSES STATE PARKWAY
MILITARY ROAD
PORTER ROAD
TO NEW YORK THRUWAY
MOYER ROAD
U.S.A.
Niagara River
TO NIAGARA ON-THE-LAKE
RESERVOIR H.E.P.C.
Niagara River
TO NIAGARA FALLS
Q.E.W.
405
8A
8
104
18
18A
31
61
GARDEN CITY SKYWAY
TOLL PLAZA
ST. DAVID'S ROAD
BASCULE BRIDGE
Welland Canal
ST. CATHARINES
TO GRIMSBY
Q.E.W.
LEGEND
ROUTE OF HIGHWAY No. 405
HIGHWAY UNDER CONSTRUCTION
1081 - 63 DRAWN BY DEPT. OF HWYS. ONT.

Work was started on regrading Welland County Road 4 (Development Road 683).

Work progressed on the King-Main interchange of Highway 403 at Hamilton and beyond this an additional contract for 2.69 miles of grading and two structures was awarded.

Maintenance

Five bays of the truss span at the north end of the Burlington Bay Skyway were painted by contract.

Twenty joints in the bridge deck of the Burlington Bay Skyway were repaired and sealed with rubberized mastic asphalt plus a neoprene joint filler to prevent moisture seeping through.

Highway 403 from the Queen Elizabeth Way to the city of Hamilton, Highway 405, from the Queen Elizabeth Way just east of St. Catharines to Queenston and Highway 8 from St. Catharines to St. David's were opened.

The Garden City Skyway over the Welland Ship Canal at St. Catharines was opened.

Patrol garages and salt sheds were erected at Peter's Corners and Homer patrol yards.

New patrol sites were purchased on Highway 3 approximately four miles east of Wainfleet on Highway 56, one mile north of Highway 3 and on Highway 20 three miles east of the junction of Highway 53 and Highway 56.

Eight new traffic signals were installed or rebuilt during the year.

Preliminary survey was carried out for winter sanding locations at Morriston, Peter's Corners and Homer patrol yards.



Aerial view of new Highway 403, looking northeasterly towards Hamilton (Hamilton District).

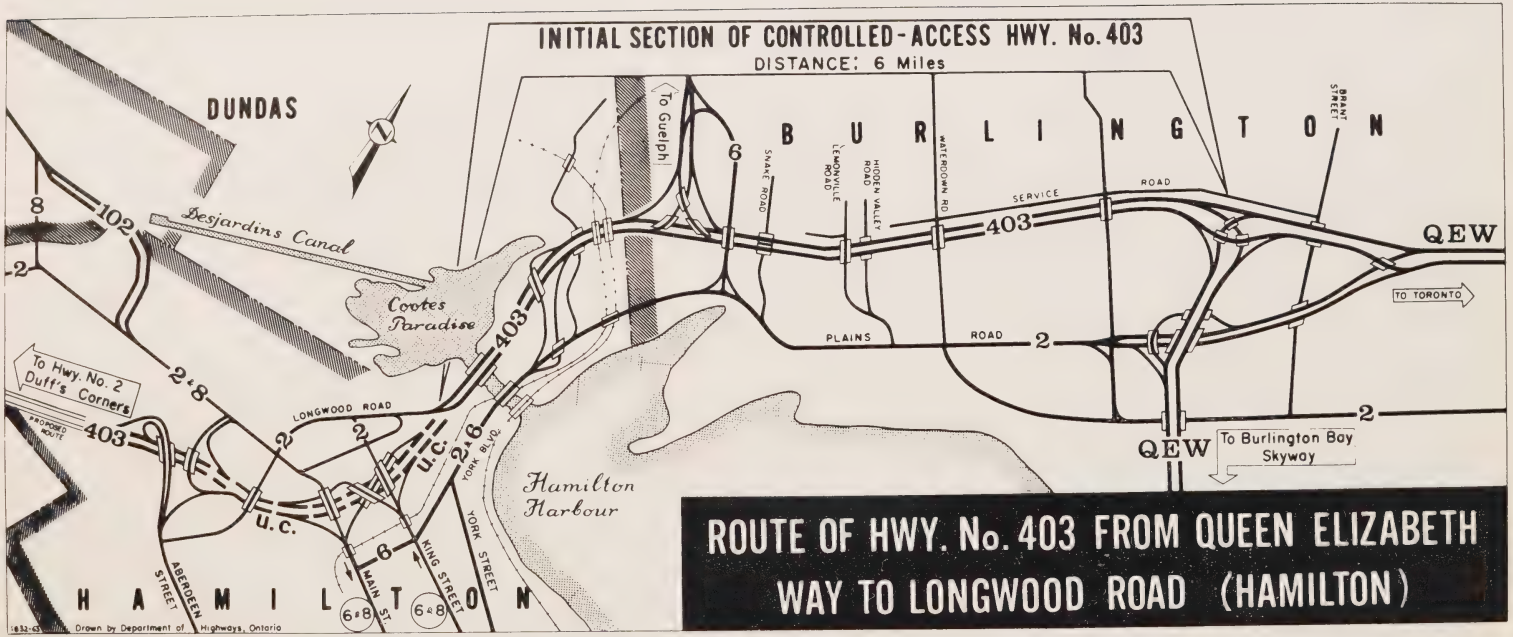


New Highway 405 looking west with Garden City Skyway in the distance (Hamilton District).

Various installations of pressure systems and modern furnaces have been installed in existing patrol buildings.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
52	TH & B	Summit, 2.7 mi. west of Dundas	1 flash. light, bell
99	TH & B	47.75 mi., first loop out of Dundas	1 flash. light, bell
Q.E.W.	NS & T	500 feet east of Bunting Road	1 flash. light, bell


INITIAL SECTION OF CONTROLLED-ACCESS HWY. No. 403
DISTANCE: 6 Miles
DUNDAS
Desjardins Canal
Cootes Paradise
Hamilton Harbour
To Guelph
BURLINGTON
SNAKE ROAD
LEMONVILLE ROAD
HIDDEN VALLEY ROAD
WATERDOWN RD
BRANT STREET
SERVICE ROAD
403
QEW
TO TORONTO
PLAINS ROAD
To Hwy. No. 2 Duff's Corners
PROPOSED ROUTE
LONGWOOD ROAD
YORK BLVD.
YORK STREET
KING STREET
MAIN ST.
ABERDEEN STREET
HAMILTON
To Burlington Bay Skyway
ROUTE OF HWY. No. 403 FROM QUEEN ELIZABETH WAY TO LONGWOOD ROAD (HAMILTON)
Drawn by Department of Highways, Ontario

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963-64	Tons Placed 1963-64
2, 20	Q.E.W. to Nelson Street, Burlington, Hwy. 2, and from Hwy. 2 to Woodward Avenue, Hamilton, Hwy. 20	4.39	1963	4.39	24,799
5	Adjacent level crossing, 2.5 mi. west of east junction of Hwys. 5 and 25	0.12	1963	0.12	285
6	0.2 mi. north of Hwy. 2, including junction with Hwy. 403	0.59	1963	0.59	3,584
6	Hagersville to Jarvis	5.75	1963	5.75	22,857
8	East end of Q.E.W. interchange to interchange west of St. David's Road	2.53	1963	2.53	1,082
20, 57 3A	Channelization at Hwys. 20 and 57, Bismark, and Hwys. 57 and 3A, Beckett's Bridge	1.14	1963		
54	Little Creek bridge and approaches, 3.5 mi. west of Caledonia	0.60	1963	0.60	1,644
58	Thorold, south from 1.3 to 1.7 mi. north of Hwy. 20	0.34	1963	0.34	2,292
102	York Street, Dundas, to Hwy. 2, Hamilton	2.02	1963	2.02	18,419
401	Intersections at Campbellville Road and Hwy. 25		1963		2,886
401	Extending north east leg deceleration lane at Hwy. 8	0.02	1963	0.02	239
403	King-Main interchange, Hamilton	1.01	1962	0.81	7,932
403	Freeman interchange to Snake Road	4.3	1963	4.30	65,292
403	Snake Road to Longwood Road	1.88	1963	1.88	36,745
405	Q.E.W. to just west of Hwy. 8	2.72	1961	2.47	9,535
405	Just west of Hwy. 8 to Queenston-Lewiston bridge	3.00	1961	1.10	5,498
Q.E.W.	East end of Garden City Skyway, including toll plaza	1.88	1962	1.88	7,162
Q.E.W.	Q.E.W. and service roads at Garden City Skyway	2.28	1963	1.16	5,335
Q.E.W.	Prudhomme's acceleration and deceleration lanes	0.50	1963	0.50	358
Q.E.W.	Niagara Street interchange	1.4	1963	0.61	4,779
	TOTALS	36.47		31.07	220,723

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963-64	Tons Placed 1963-64
3	Simcoe to Jarvis	0.85	986
3	Nelles Corners to Dunnville	1.96	1,996
3	Dunville to Fort Erie	3.83	3,918
3	Nelles Corners, westerly to Hwy. 6	9.04	27,229
3A	Welland south limits to Chambers Corners	1.10	1,176
3C	Fort Erie to Ridgeway	0.60	618
5	Brant County line to Palermo	1.16	1,207
6	Port Dover to Jarvis	0.99	1,015
6	Aberfoyle to Clappison's Corners	1.16	1,193
8	Galt to Sheffield	0.43	388
8	Winona to Niagara Falls	1.03	1,081
20	Niagara Falls west limits to Niagara Falls	0.85	855
56	Binbrook to Elfrida	0.37	398
58	Turner's Corners to Welland	0.48	540
Q.E.W.	Hwy. 25 interchange to Hwy. 2	3.70	406
	TOTALS	27.55	43,006

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
54	Caledonia to Cayuga, Cainsville to Caledonia	21.5	62,525	2,927.70
24	Port Dover to Simcoe	7.0	24,463	1,023.55
	TOTALS	28.50	86,988	3,751.25

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
6	Sandusk Creek	1963	1963	Rigid frame
25	C.N.R. subway	1963	1963	Steel girder
54	Little Creek	1963	1963	Flat slab
403	King's Road underpass	1961	1963	Continuous girder
403	Des Jardines Canal bridge 13	1961	1963	Continuous steel girder
403	Ramp "J" underpass, Bridge 16	1962	.....	Continuous steel girder
403	King Street underpass, Bridge 17	1962	1963	Continuous steel girder
403	Ramp "H" underpass, Bridge 18	1962	.....	Continuous steel girder
403	Church Access Road over TH & B Railway, Bridge 19	1962	1963	Concrete slab and steel girder
403	Ramp "L" overpass, Bridge 25 (Twin Bridges)	1962	1963	Concrete rigid frame
403	King Street Bridge over TH & B Railway, Bridge 20	1962	1963	Concrete slab and steel girder
403	Park Road underpass	1963	.....	Continuous girder
403	West Street underpass	1963	.....	Continuous girder
403	North Park Street underpass	1963	.....	Continuous girder
406	Glendale Avenue overpass	1963	.....	Continuous girder
406	St. David's Road underpass	1963	.....	Steel beam
406	Westchester Avenue underpass	1963	.....	Steel beam
406	Chestnut Street underpass	1963	.....	Concrete beam and slab
406	C.N.R. subway	1962	1963	Concrete rigid frame, slab and girder
451 Q.E.W.	Garden City Skyway bridge (toll bridge over Welland ship canal and C.N. railway)	1960	1963	Continuous girder
403	C.N.R. subway, Bridge No. 8	1963	1963	Continuous steel girder
403	At Ramp "L"	1963	1963	Reinforcing concrete
451 Q.E.W.	Niagara Street interchange	1963	.....	Concrete continuous girder
5	Tansley, C.N.R. overhead	1963	.....	Concrete continuous girder

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64	Pave. Width
Q.E.W.	East end of Garden City Skyway including toll plaza	1.99	1963	1.99	7,162	2/24 and various
Q.E.W.	Niagara Street interchange, St. Catharines	1.43	1963	0.05	2,468	24 and various
	TOTALS	3.42		2.04	9,630	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963-64	Sq. Yds. Placed 1963-64	Pave. Width
8	East end of Q.E.W. to interchange west of St. David's	2.53	1962	2.53	33,733	24 Ft. and various
405	1 mi. west of Hwy. 8 to Queenston-Lewiston bridge	5.40	1961	5.40	90,344	2/24 Ft. and various
Q.E.W.	East end of Garden City Skyway including toll plaza	1.99	1962	1.99	57,161	2/24 Ft. and various
	TOTALS	9.92		9.92	181,238	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963-64	Tons Placed 1963-64
2, 20	Q.E.W. to Nelson Street, Burlington, Hwy. 2, and from Hwy. 2 to Woodward Avenue, Hamilton, Hwy. 20	4.39	942
6	0.2 mi. north of Hwy. 2 including junction with Hwy. 403	0.59	1,909
6	Hagersville to Jarvis	5.75	11,951
8	East end of Q.E.W. interchange to interchange west of St. David's	2.53	10,136
54	Little Creek bridge and approaches, 3.5 mi. west of Caledonia	0.60	539
102	York Street, Dundas, to Hwy. 2, Hamilton	2.02	3,340
401	Extending north east deceleration lane at Hwy. 8 interchange	0.02	204
401	Intersections at Campbellville Road and Hwy. 25		2,238
403	Snake Road easterly	0.70	1,397
403	King-Main interchange	1.01	3,014
403	Snake Road to Longwood Road	1.88	1,909
405	Just west of Hwy. 8 to Queenston-Lewiston bridge	3.00	13,321
Q.E.W.	East end of Garden City Skyway, including toll plaza	1.88	9,129
Q.E.W.	Niagara Street interchange	0.66	3,196
405	Q.E.W. to just west of Hwy. 8	2.72	6,883
	TOTALS	27.75	70,108

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963-64	Tons Placed 1963-64
2	Bronte to Brantford	28.7	1,104
3	Fort Erie to Simcoe	85.5	1,080
3A	Chambers Corners to Welland	9.3	195
3C	Fort Erie to Ridgeway	6.8	119
5	Palermo to Brant County line	27.7	178
6	Port Dover to Guelph	59.3	629
7	Guelph to Hwy. 10	30.4	53
8	Galt to Niagara Falls	62.1	1,581
8A	St. David's to Queenston	2.8	95
20	Burlington to Niagara Falls	45.9	1,134
24	Simcoe to Port Dover	9.3	150
25	Q.E.W. to Hwy. 7	22.2	106
52	Hwy. 2 to Hwy. 97	13.9	157
53	Hwy. 20 to Hwy. 2	7.2	407
54	Cayuga to Cainsville	26.9	1,121
56	Elfrida to Hwy. 3	14.8	1,268
57	Bismark to Beckett's bridge	8.8	207
58	Port Colborne to Hwy. 8	15.7	312

Crushed Gravel and Stone on Roads by Department's Forces (Cont'd)

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
97	Hwy. 6 to Galt	13.7	95
99	Dundas to Hwy. 24	16.9	353
102	Dundas to Hamilton	4.0	18
401	Freelton to Milton	26.2	388
403	Junction Q.E.W. to Longwood Road	6.5	105
405	Junction Q.E.W. to Queenston-Lewiston bridge	5.5	182
Q.E.W.	Bronte to Fort Erie	71.2	2,165
	TOTALS	621.3	13,202

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
2, 20	Q.E.W. to Nelson Street, Burlington, Hwy. 2, and from Hwy. 2 to Woodward Avenue, Hwy. 20	4.39	1963	4.39
5	Adjust level crossing 2.5 mi. west of east junction of Hwys. 5 and 25	0.12	1963	0.12
6	0.2 mi. north of Hwy. 2 including junction with Hwy. 403	0.59	1963	0.59
6	Hagersville to Jarvis	5.75	1963	5.75
8	East end of Q.E.W. interchange to interchange west of St. David's Road	2.53	1962	2.23
20, 57, 3A	Channelization at Hwys. 20 and 57 (Bismark) and Hwys. 57 and 3A (Beckett's Bridge)	1.14	1963	.34
54	Little Creek bridge and approaches, 3.5 mi. west of Caledonia	0.6	1963	.54
58	Thorold south from 1.3 to 1.7 mi. north of Hwy. 20	0.34	1963	0.34
102	York Street, Dundas, to Hwy. 2, Hamilton	2.02	1963	2.02
401	Extending north-east deceleration lane at Hwy. 8 intersection	0.02	1963	.02
401	Hwy. 401 intersections at Campbellville Road and at Hwy. 25	.....	1963	.....
403	C.N.R. subway to King-Main interchange, including York Blvd., Hamilton	1.65	1962	0.85
403	Snake Road, easterly	2.70	1962	0.70
403	King-Main interchange (Hamilton)	1.01	1962	0.91
403	East end at Hwy. 2 to Park Road (Brantford)	3.03	1963	1.98
403	Park Road to North Park Street (Brantford)	1.33	1963	0.49
403	Main Street to Aberdeen Avenue (Hamilton)	2.69	1963	0.81
403	Freeman interchange to Snake Road	4.3	1963	4.30
403	Snake Road to Longwood Road	1.88	1963	1.88
406	St. David's Road to Westchester Avenue	3.6	1963	2.10
Q.E.W.	East end of Garden City Skyway, including toll plaza	1.88	1962	1.08
Q.E.W.	Q.E.W. and service roads at Garden City Skyway	2.28	1963	.76
Q.E.W.	Prudhomme's acceleration and deceleration lanes	0.50	1963	0.50
Q.E.W.	Niagara Street interchange	1.42	1963	0.79
	TOTALS	45.77		33.49

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2, 20	Q.E.W. to Nelson Street, Burlington, (Hwy. 2) and from Hwy. 2 to Woodward Avenue, Hamilton, (Hwy. 20)	4.39	1963	4.09	72,618
5	Adjacent level crossing, 2.5 mi. west of east junction of Hwys. 5 and 25	0.12	1963	0.12	2,991
6	0.2 mi. north of Hwy. 2, including junction with Hwy. 403	0.59	1963	0.59	28,960

Granular Base on New Grading (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
8	East end of Q.E.W. interchange to interchange west of St. David's Road	2.53	1963	2.23	53,881
20, 57 3A	Channelization at Hwys. 20 and 57 (Bismark) and Hwys. 57 and 3A (Beckett's Bridge)	1.14	1963	0.35	18,550
54	Little Creek bridge and approaches, 3.5 mi. west of Caledonia	0.60	1963	0.55	26,883
58	Thorold, south from 1.3 to 1.7 mi. north of Hwy. 20	0.34	1963	0.34	7,043
102	York Street, Dundas, to Hwy. 2, Hamilton	2.02	1963	2.02	77,125
401	Intersections, Campbellville Road and Hwy. 25	.....	1963	.....	31,756
401	Extending north east decleration lane at Hwy. 8 interchange	0.02	1963	0.02	2,047
6	Hagersville to Jarvis	5.75	1963	5.75	212,389
403	Snake Road, easterly	2.00	1962	0.10	6,552
403	King-Main interchange (Hamilton)	1.01	1962	0.20	25,065
403	Freeman interchange to Snake Road	4.3	1963	4.30	481,860
403	Snake Road to Longwood Road	1.88	1963	1.88	236,587
405	Q.E.W. to just west of Hwy. 8	2.72	1961	00.0	66,907
Q.E.W.	East end of Garden City Skyway, including toll plaza	1.88	1962	.08	53,831
Q.E.W.	Q.E.W. and service roads at Garden City Skyway	2.28	1963	.76	25,146
Q.E.W.	Prudhomme's acceleration and deceleration lanes	0.50	1963	0.50	2,749
Q.E.W.	Niagara Street interchange	1.42	1963	0.79	51,700
	TOTALS	35.49		24.67	1,484,640

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
6	Jct. Hwy. 6 and 401 at Morriston patrol yard	Salt shed	1963	1963
8	Jct. Hwy. 5 and 8 at Peter's Corners, patrol yard	Salt shed	1963	1963
Q.E.W.	Garden City Skyway	Administration building and toll plaza	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	10	...	
Off-road parks maintained (acres)	5		
Roads snowploughed and kept open, King's Highways	24	.....	793
Roadside picnic places maintained	169		
Routine maintenance, King's Highways	24	.....	793
Salt for de-icing roads (raw)		2,872	
Salt in sand, stockpiled		10,531	
Sand for winter maintenance		72,243	
Scale houses maintained	5		
Seeding by department's forces (sq. yds.)	1,302,928	.....	.....
Snow fence erected, dismantled, stored	.....	.....	46.8
Traffic lights installed this year	5	.....	.....
Weed control	.....	.....	190
Zone painting on King's Highways (gals.)	11,791	.....	995

DISTRICT No. 5—OWEN SOUND

F. G. ALLEN, P.Eng., District Engineer

Construction

Paving on Highway 6 from Orchard to Durham was completed. Also paved this year was 9.86 miles of Highway 6 from Ferndale to Miller Lake, and 5.91 miles from the junction of Highways 6 and 21 westerly. The latter project included regrading and widening, together with curb-and-gutter and sewer through the village of Allenford. The improvement of the intersection of Highway 21 and County Road 10 to Tara was also carried out under the contract. On Highway 4, grading, drainage, granular base and hot-mix paving was completed from 4.13 miles west of Durham to Allan Park.

Grading, drainage, granular base and hot-mix paving was completed on Highway 90, Barrie west 6.3 miles. This project also included the superelevation of curves on Highway 400 approximately 2 miles north of Barrie.

Grading, drainage, granular base and hot-mix paving was carried out on Highways 9 and 21 at Kincardine. This work also included curb-and-gutter along with a storm sewer system. This project has greatly improved the intersection of these two highways.

Grading, drainage and granular base was started on Highway 6, Dornoch to Chatsworth. Much of this work was done in 1963 and we anticipate early completion in 1964.

Work on two structures, at the Pretty River at Collingwood, Highway 26, and at the Conestogo River in the village of Arthur was begun. A feature of the work on structures is the use of pre-stressed concrete beams. Both projects included grading, drainage, granular base and hot-mix paving together with curb-and-gutter and sewer work.

Maintenance

On April 1, 1963, Highway 89 was extended by 40 miles in this district. A new patrol was formed to maintain this extension from Harriston to Shelburne. Highway 89 was also extended easterly from Cookstown to Highway 400.

More than 200 miles of various sections of highways were zone painted, using the overlay bead method for the first time. Paint is first applied to pavement followed by glass beads on top of the wet paint. The balance of the district highways were zone painted with glass beads and zone paint mixed prior to application (pre-mix). The overlay method was inspected regularly and results appear to be very favourable.

A bridge crew was placed on the establishment this year. Local labourers from the patrols and hired casual staff work in conjunction with the new foreman and two sub-foremen. Good results are being obtained by painting bridges using day labour methods.

A large ski sign has been approved for location and erection at sideroads leading into the much used ski areas which are prevalent in the Owen Sound District. These signs have helped greatly to expedite large movement of week-end traffic.

The construction of the atomic energy plant of the Hydro Electric Power Commission at Douglas Point located west of Highway 21 on Lake Huron south of Port Elgin has resulted in the movement of excessively heavy loads over Highway 21. Some of these loads have been up to 400 tons in gross weight. No apparent damage has been caused to the highway. The only available and capable float had to be brought in from New York State by railroad and assembled for the job. While in movement, maximum speed of float and load would not exceed 3–5 miles per hour.

The winter's snow fall was abnormally light after Christmas but heavy in December. This permitted winter works labour crews to make very good progress. Work involved tree cutting, and trimming, ditch stabilization with gabions and similar work adjacent to bridges. Regular plow crews were utilized in good weather periods to paint buildings etc.

Seminars of Department of Highways and Ontario Provincial Police at Barrie and Mount Forest provided useful information on both sides in helping to solve traffic problems.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
6	C.P.R.	Mileage 16.37, Walkerton Sub-division, Township Glenelg.....	2 lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
4	Durham west to Allan Park.....	4.13	1963	4.13	5,988.02
6	Orchard northerly to Durham.....	5.72	1962	5.72	7,546.36
6	Ferndale Corners north to Miller Lake.....	9.86	1963	9.86	14,948.77
21	From west of Jct. Hwy. 6 west 5.91 mi.....	5.91	1963	5.91	11,944.63
21	Saugeen River bridge, Southampton.....	.....	1963	.....	318.60
9, 21	Intersection Hwys. 9 and 21, Kincardine.....	.95	1963	.95	3,512.27
90	From Hwy. 400 west, including old Hwy. 90..	6.3	1962	6.3	20,408.27
400	2 mi. north of Hwy. 26.....	.5	1962	.5	5,994.80
90	Vicinity of Ferndale Road.....	.55	1963	.55	702.16
	TOTALS.....	27.80		27.80	71,363.88

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
6	1 mi. north of Wiarton to 14 mi. north of Wiarton.....	13	42,684.00	960.00
91	Duntroon to Stayner.....	5	13,308.00	531.45
	TOTALS.....	18	55,992.00	1,491.45

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
9	Orangeville, westerly to Jct. Hwy. 104, resurfacing with 0.5 inch Dix-Seal to sections where severe flushing occurred.....	2	870.48

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
4	Durham west to Allan Park	4.13	10,558.63
6	Orchard to Durham	5.76	2,860.16
6	Ferndale Corners northerly to Miller Lake	9.86	8,283.08
6	Department of Highways yard at Miller Lake	.....	4,999.82
6	Dornoch to Chatsworth	9.25	59,525.00
6	3.5 mi. north of Wiarton	.....	3,989.04
6	9 mi. north of Wiarton	.....	2,003.23
21	North Bruce, 9 mi. south of Port Elgin	.....	4,991.95
24	Department of Highways yard at Singhampton	.....	4,980.14
27	Department of Highways yard 2 mi. north of Waverley	.....	4,954.80
92	D.H.O. yard 2 mi. west of Elmvale	.....	5,018.00
21	From west Jct. Hwy. 6, west 5.91 mi.	5.91	14,414.00
9, 21	Intersection Hwys. 9 and 21 at Kincardine	.95	12,171.86
90	From Hwy. 400 west, including old Hwy. 90	6.3	69,541.73
26	Pretty River bridge at Collingwood	.66	850.00
400	2 mi. north of Hwy. 26	.5	7,029.26
90	Vicinity of Ferndale Road	.55	743.38
	TOTALS	43.87	216,914.08

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
4	Flesherton to Jct. Hwy. 9	40.80	550
6	Arthur to Tobermory	118.52	6,228
9	Jct. Hwys. 9 and 104 to Arthur-Kincardine	41.36	1,756
10	Orangeville to Owen Sound	57.84	2,870
12	Jct. Hwys. 12 and 27 to Midland	.83	8
21	Jct. Hwys. 9 and 21 to Jct. Hwys. 6 and 21	42.91	2,810
24	Shelburne to Collingwood	31.51	1,132
26	Barrie to Owen Sound	71.42	4,100
27	Cookstown to Penetang	40.92	1,180
89	Cookstown to Jct. Hwys. 89-10-24	23.01	2,770
90	Barrie to Angus	11.38	456
91	Stayner to Duntroon	5.09	6,200
92	Elmvale to Wasaga Beach	8.67	.....
93	Craighurst to Jct. Hwys. 93 and 27	17.41	48
104	Jct. Hwys. 9 and 104 to Grand Valley	1.76	536
400	Crownhill to Jct. Hwy. 93	9.90	80
	TOTALS	523.33	30,724

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
9, 21	Intersection of Hwys. 9 and 21 at Kincardine	.95	1963	.95
90	Hwy. 90 from Hwy. 400 westerly, including work required on old Hwy. 90 and Ferndale Road	6.3	1962	6.3
6	Dornoch to Chatsworth	9.25	1963	.25
	TOTALS	16.50		7.50

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
4	Durham westerly to Allan Park	4.13	1963	4.13	18,203
6	Dornoch to Chatsworth	9.25	1963	5.25	232,709
21	From Jct. Hwy. 6 westerly 5.91 mi.	5.91	1963	5.91	21,083
9, 21	Intersection of Hwys. 9 and 21 at Kincardine	.95	1963	.95	45,544
90	From Hwy. 400 west, including old Hwy. 90	6.3	1963	6.3	125,623
	TOTALS	26.54		22.54	443,162

New Buildings

Hwy. No.	Location	Type of Building	Begun	Complete
27	Patrol yard, Hwy. 27, 3 mi. north of Cookstown	Lean-to roof and wall behind salt shed for storage of snowplough	1964	1964
27	Barrie depot yard, 62 Ardogh Road, Barrie	Salt storage	1963	1963
93	Patrol yard, Jct. Hwy. 93 and Simcoe County Road No. 4	5-bay metal patrol garage with office and tool room extension	1962	1963

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Bridges painted	(gals.)	163	.....	.....
Calcium dust layer on gravel roads		.....	120	28
Off-road parks maintained		14		
Roadside picnic places maintained		51	.....	.....
Routine maintenance, King's Highways				537.80
Salt for de-icing roads (raw)		.....	6,964	.....
Salt in sand, stockpiled			4,678	
Sand for winter maintenance			87,500	
Seeding by department's forces	(acres)	706,640		
Shrubs received and planted this year		1,659	.....	.....
Signs erected or replaced		3,168	.....	.....
Snow fence erected, dismantled, stored		.....	.....	168
Weed control	(gals.)	444	.....	247
Zone painting on King's Highways	(gals.)	8,989		691.4

DISTRICT No. 6—TORONTO

C. FRASER, P.Eng., District Engineer

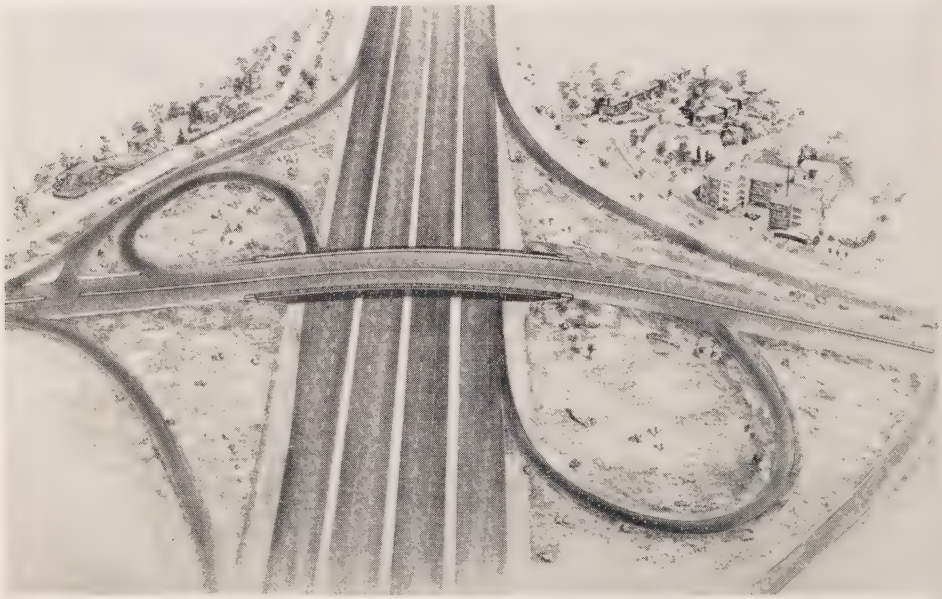
Construction

During the past year we took the first large step towards the reconstruction of Highway 401 (the Toronto By-pass). The entire collector road system is a completely new application to Ontario highways. This was the largest single effort on which the district was engaged. The chief obstacle, of course, was the extremely heavy traffic. Contracts had to be awarded with very tight schedules, and a great deal of emphasis placed on the sequence of construction, since the project involves the construction of collector lanes prior to the central core. The traffic problem has also required a revision of our standard method of layout. We are now using the co-ordinate system, instead of the usual angle-distance method.

Also, along Highway 401 we were involved in the construction of a great number of structures. Many of these were of advanced design: cast-in-place with prestressed decks. These were begun in the 1963–64 season to allow for the later grading and paving in 1964. In general, the contracts awarded for these projects have been much larger than had previously been customary: the largest awarded in 1963 was the "400 and 401 Interchange" with a tender value of more than $6,000,000.

The entire project has required a complete re-organization of our construction staff to allow for not only the increased number for layout and supervision, but also for the new procedures initiated by the contracts.

Toronto District was also active aside from the Toronto By-pass. The controlled-access road to Toronto International Airport and the widening of Dixon Road offered many major construction problems.



Artist's sketch of Highway 401 intersection with Avenue Road as it will look when widened to 12 lanes across Metropolitan Toronto (Toronto District).



"Tree Saver" in action near Toronto

In 1963 work started the previous year at Markham, Bradford, Bolton, Port Credit and Cooksville was completed. These contracts presented the usual problems encountered in built-up areas. In the Dunbarton area we worked with the C.N.R. to build the Dunbarton By-pass, Highway 2. This contract involved a good deal of co-operation between not only the C.N.R. and the department, but also the many utility companies in the area.

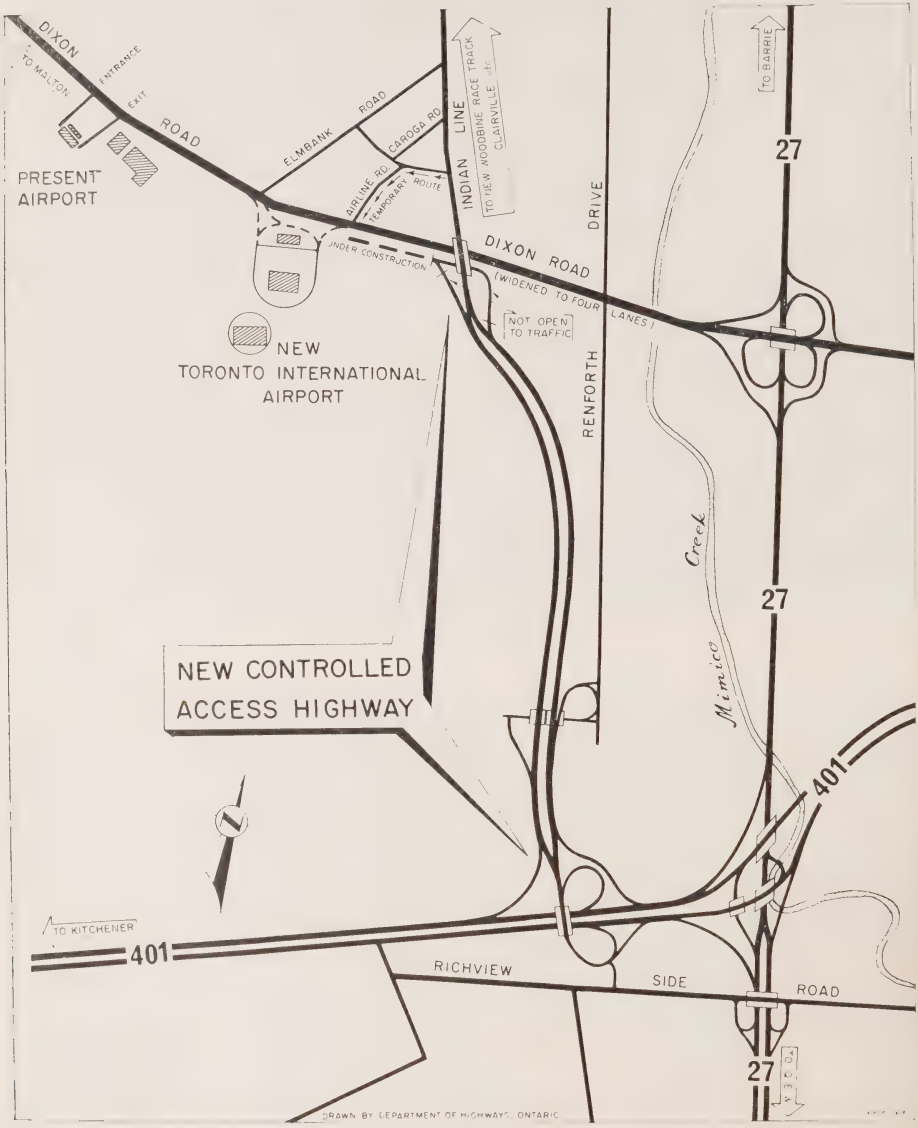
The year was a busy year in the Toronto District, with a total expenditure on capital construction of more than $16,000,000.

Maintenance

Summer and winter maintenance was carried out along similar patterns to previous years. The winter proved to be less severe than average. Nevertheless 97,850 tons sand and 24,500 tons coarse salt were used to maintain 777 miles of road.

In a continuing program of hot-mix patching, 15,384 tons of hot laid asphalt was used on four contracts to correct rippling and on rough sections of pavement. Also 1.5 miles of Highway 2 from the junction of 122 southerly was re-surfaced with Dix-Seal to correct a slick condition.

A rather interesting experiment was carried out on Highway 400 from the junction of Highways 26, 27 northerly 2.0 miles in the south-bound lane. Using


DIXON ROAD
TO MALTON
ENTRANCE
EXIT
PRESENT AIRPORT
ELMBANK ROAD
CAROGA RD.
AIRLINE RD.
TEMPORARY ROUTE
UNDER CONSTRUCTION
INDIAN LINE
TO NEW WOODBINE RACE TRACK CLAIRVILLE
DIXON ROAD
(WIDENED TO FOUR LANES)
NOT OPEN TO TRAFFIC
DRIVE
RENFORTH
TO BARRIE
27
NEW TORONTO INTERNATIONAL AIRPORT
NEW CONTROLLED ACCESS HIGHWAY
Mimico Creek
401
TO KITCHENER
RICHVIEW
SIDE
ROAD
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

various types of dense-graded sand surface treatment supplied by four companies. sections of this road were re-surfaced to test the qualities of the various mixes.

Bridge repairs and painting of handrails were carried on throughout the summer season.

Our landscaping program along the King's Highways continued, and saw the completion of 148 acres of mulch seeding, and the planting of 3,795 shrubs and trees. Extensive use of the "Tree Saver" was made to move trees from Highway 401 prior to reconstruction. Weed control was carried on throughout the district.

Some 612 tons of 35 per cent calcium chloride brine were applied to shoulders of highways in built-up areas in an effort to control dust. It proved no more satisfactory than in previous years.

In a further effort to repair sections of concrete pavement on Highway 401 (between Highway 27 and Highway 10) that have become quite rough, extensive repair to joints, and mud-jacking of concrete slabs were carried out. This work proved satisfactory and will be continued next year.

Our sign shop erected 5,558 signs throughout the district in a continuing program of sign maintenance. Their work was further increased with construction-signing of detours etc., throughout the Highway 401 reconstruction area.

Traffic lights were installed at 17 locations, highway lighting at 18 locations, flashers and illuminated signs at 22 locations.

Some 26,000 gallons of zone paint was applied throughout the district.

The emergency traffic patrol which was instituted on Highway 401 between Kennedy Road and Highway 27, a distance of 18.2 miles on June 6, 1963, has proven very successful. Four vehicles were put into operation, each of which is equipped with some 60 items of equipment, such as traffic control devices, first aid and accident equipment. In the first 7 months of operation, 23,526 vehicles



Modern methods are used in grass seeding along our highways (Toronto District).



Emergency Patrol on Highway 401 during widening to 12 lanes (Toronto District).

were checked for such things as "call for tow truck", out of gas, flat tires, mechanical trouble, and assistance at accidents.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
7, 11	Hwy. 11 (Langstaff) west to Bathurst	3.37	1962	1.70	21,695
48	3.7 mi. north of Hwy. 401	4.10	1962	3.48	17,448
400	5.2 mi. north of Hwy. 88	.34	1962	.10	1,585
50	Hwy. 50 at Bolton	2.60	1962	2.08	15,164
10	From 0.6 mi. south Q.E.W. to Hwy. 2	.60	1962	.18	3,676
11	From Jct. Hwy. 88 to Fennell's Corners	6.76	1962	5.07	17,871
5	Cooksville west to Erindale east limits	3.00	1962	2.88	26,177
401	Sheppard Avenue interchange	.70	1962	.70	929
401	Avenue Road	1.08	1962	.16	9,114
C.A.H.	Renforth Drive from Hwy. 401 to Dixon Road, and Dixon Road from Hwy. 27 to Malton	3.22	1963	1.77	5,701
7	Don Mills Road and Hwy. 7	.74	1963	.74	4,543
27	Service Road, south west Dixon Road and Hwy. 27 interchange	.53	1963	.53	1,398
401	Between Bathurst Street and Wilson Avenue	.....	1963	64%	987
2	Dunbarton, 2.2 mi. east Metro. limit east 1.08 mi.	1.08	1963	.64	3,166
401	Detour between Bathurst, Dufferin at Spadina	.99	1963	.99	7,356
401	Dufferin Street interchange	.....	1963	74%	5,585
2	Metro. Toronto west limit, Port Credit east limit	2.60	1963	2.60	2,497
401	Jane Street interchange, Black Creek culvert extensions	.48	1963	.29	2,833
401	Hwy. 400 interchange from Jane Street to West Wendell Avenue	1.00	1963	.....	983
	TOTALS	33.19		23.91	148,708

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed 1963–64
Var.	Various isolated patching throughout district	814

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
122	Jct. Hwy. 2 to jct. Queen Elizabeth Way	3.78	7,454

Bituminous Surface Treatment

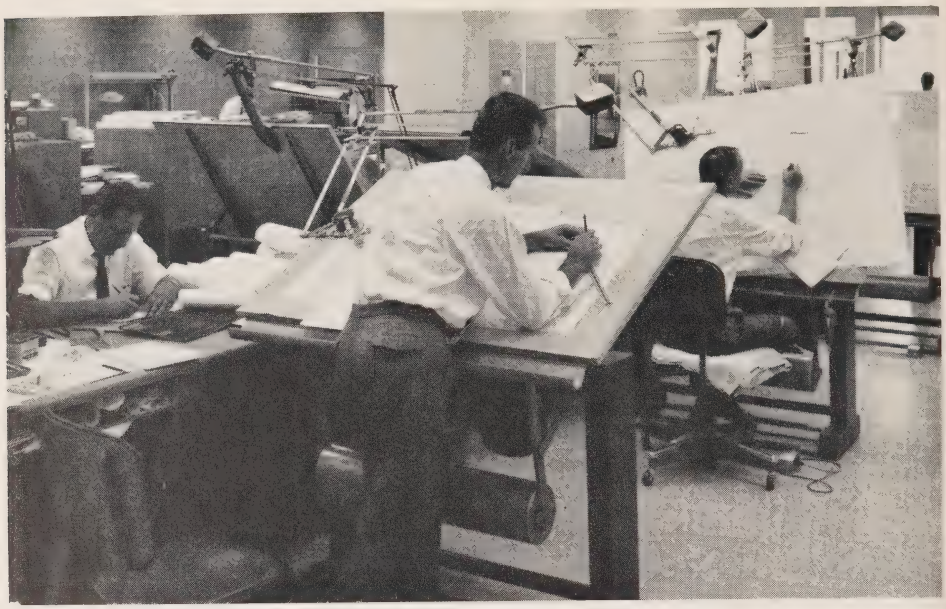
Hwy. No.	Location	Miles Compl. 1963–64	Tons Dix-Seal Used 1963–64
2	Jct. Hwy. 122 southerly 1.5 mi	1.5	444
400	Bayfield Street to Duckworth Street, underpass (south-bound lane) experimental surface treatment	2.0	1,010
	Totals	3.5	1,454

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
C.A.H.,				
401	Hwy. 401, Renforth Drive	1963	1963	Rigid frame, reinf. conc.
27	Dixon Road	1963	1963	Prestressed beams, reinf. conc.
C.A.H.,				
401	Hwy. 401, Dixon Road	1963	1963	Steel beam, reinf. conc.
401	Hwy. 401, Avenue Road	1962	1963	Steel beam, reinf. conc.
401	Hwy. 401, Wilson Ave.	1963	1963	Steel beam, reinf. conc.
401	Hwy. 401, Bathurst Street	1963	1963	Prestressed beams, reinf. conc.
401	Hwy. 401, Dufferin Street	1963	1963	Prestressed girders, reinf. conc.
401	Hwy. 401, Dufferin Street	1963	1963	Prestressed beams, reinforced conc.
401	Hwy. 401, C.N.R. east of Keele Street	1963	1963	Rigid frame, reinf. conc.

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64	Pave. Width
401	Between Bathurst Street and Wilson Avenue	7.58	1963	5.99	606	Various
401	Dufferin Street interchange	.....	1963	.....	3,445	Various
	Totals	7.58		5.99	4,051	



Drafting office at D.H.O. Headquarters, Downsview (Toronto District).

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Sq. Yds. Placed 1963–64	Pave. Width
401	Avenue Road	1.08	1962	.58	51,657	36′ Ave.
C.A.H.	Renforth Drive from Hwy. 401 to Dixon Road and Dixon Road from Hwy. 27 to Malton	3.22	1963	3.15	94,050	48′ Ave.
	TOTALS	4.30		3.73	145,707	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
7, 11	Hwy. 11 (Langstaff) west to Bathurst	1.68	140,986
48	3.7 mi. north of Hwy. 401	1.02	74,538
400	5.2 mi. north of Hwy. 88	.10	5,917
50	Hwy. 50 at Bolton	1.98	119,580
10	From 0.6 mi. south of Q.E.W. to Hwy. 2	.24	10,853
11	From Jct. Hwy. 88 to Fennell's Corners	3.52	137,780
5	Cooksville west to Erindale east limits	2.55	166,376
401	Avenue Road	.62	178,865
C.A.H.	Renforth Drive from Hwy. 401 to Dixon Road and Dixon Road from Hwy. 27 to Malton	3.22	237,150
7	Don Mills Road and Hwy. 7	.74	38,938
27	Service road south west Dixon Road and Hwy. 27	.53	15,031
401	Between Bathurst Street and Wilson Avenue	.....	6,591
2	Dunbarton 2.2 mi. east Metro. limits east 1.08 mi.	1.04	53,952
401	Detour between Bathurst, Dufferin at Spadina	.99	58,661
401	Dufferin Street interchange	.....	47,945
2	Metro. Toronto west limits to Port Credit east limits	2.60	12,192
401	Jane Street interchange including Black Creek culvert extension	.27	29,356
401	Hwy. 400 interchange from Jane Street to West Wendell Avenue	.....	38,229
	TOTALS	21.10	1,372,940

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Tons Placed 1963–64
Var.	Various locations (shoulders only)	29,490

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
7-11	Hwy. 11 (Langstaff) west to Bathurst	3.37	1962	1.68
48	3.7 mi. north of Hwy. 401	4.10	1962	1.02
400	5.2 mi. north of Hwy. 88	.34	1962	.07
50	Hwy. 50 at Bolton	2.60	1962	1.98
10	From 0.6 mi. south of Q.E.W. to Hwy. 2	.60	1962	.24
11	From jct. Hwy. 88 to Fennell's Corners	6.76	1962	3.52
5	Cooksville west to Erindale east limits	3.00	1962	2.55
401	Avenue Road	1.08	1962	.95
C.A.H.	Renforth Drive from Hwy. 401 to Dixon Road and Dixon Road from Hwy. 27 to Malton	3.22	1963	3.22
7	Don Mills Road and Hwy. 7	.74	1963	.74
27	Service Road south west Dixon Road and Hwy. 27 interchange	.53	1963	.53
401	Between Bathurst Street and Wilson Avenue	.....	1963	82%
2	Dunbarton, 2.2 mi. east Metro. limits, east 1.08 mi.	1.08	1963	1.04
401	Detour between Bathurst, Dufferin at Spadina	.99	1963	.99
401	Dufferin Street interchange	.....	1963	....
2	Metro. Toronto west limits to Port Credit east limits	2.60	1963	2.60
401	Jane Street interchange including Black Creek culvert extensions	.48	1963	.38
401	Hwy. 400 interchange from Jane Street west Wendell Avenue	1.00	1963	.01
401	Spadina interchange	.....	1963	100%
		32.49		21.52

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
7-11	Hwy. 11 (Langstaff), west to Bathurst	3.37	1962	1.68	129,093
48	3.7 mi. north of Hwy. 401	4.10	1962	1.02	68,461
400	5.2 mi. north of Hwy. 88	.34	1962	.07	5,102
50	Hwy. 50 at Bolton	2.60	1962	1.98	112,406
10	From 0.6 mi. south of Q.E.W. to Hwy. 2	.60	1962	.24	7,773
11	From jct. Hwy. 88 to Fennell's Corners	6.76	1962	3.52	133,242
5	Cooksville west to Erindale east limits	3.00	1962	2.55	160,753
401	Avenue Road	1.08	1962	.50	178,865
C.A.H.	Renforth Drive from Hwy. 401 to Dixon Road and Dixon Road from Hwy. 27 to Malton	3.22	1963	3.22	233,250
7	Don Mills Road and Hwy. 7	.74	1963	.74	37,499
27	Service road south west Dixon Road and Hwy. 27 interchange	.53	1963	.53	15,031
401	Between Bathurst Street and Wilson Avenue	.....		60%	6,540
2	Dunbarton, 2.2 mi. east Metro. limits, east 1.08 mi.	1.08	1963	1.04	53,952
401	Detour between Bathurst, Dufferin at Spadina	.99	1963	.99	58,661
401	Dufferin Street interchange	.....	1963	.....	47,945
2	Metro. Toronto west limits to Port Credit east limits	2.60	1963	2.60	12,192
401	Jane Street interchange including Black Creek culvert extension	.48	1963	.31	28,753
401	Hwy. 400 interchange from Jane Street to West Wendell Avenue	1.00	1963	.01	38,229
	TOTALS	32.49		21.00	1,327,747



Construction of The Malton Airport road (Toronto District).



One of many traffic hazards in winter. Car trying to pass snowplow during storm (Toronto District).

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
7	Brooklin yard	Salt shed	1963	1963
Var.	Various locations	4 portable field offices	1963	1963
401	D.H.O. yard, Hwys. 401 and 10	Distributor testing centre	1963	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Roads snowploughed and kept open, King's Highways	.....	.....	777
Roadside picnic places maintained	4	.....	.....
Routine maintenance, King's Highways	.....	.....	777
Salt for de-icing roads (raw)		24,500	
Salt in sand, stockpiled		6,500	
Sand for winter maintenance		97,850	
Scale houses maintained	6	.....	.....
Seeding by department's forces (acres)	148		
Shrubs received and planted this year	3,795	.....	.....
Signs erected or replaced	5,558		
Snow fence erected, dismantled, stored			82
Traffic lights installed this year	17	.....	.....
Weed control			1,595
Zone painting on King's Highways (gals.)	26,000	.....	.....

DISTRICT No. 7—PORT HOPE

F. B. WHITELEY, P.Eng., District Engineer

Construction

Work completed this fiscal year included 7.5 miles of grading, paving and structure on Highway 33 from Hillier to Consecon. The structure completed was over the Consecon River. Also reconstructed was 4.5 miles of old Highway 33.

On Highway 7A this fiscal year saw the completion of grading and paving of Highway 7A from Port Perry to the junction of Highway 35. The year's work covered 7.5 miles of this stretch of highway. Grading, paving and resurfacing was completed on 4.6 miles of Highway 12. This work on Highway 12 completed a section from the village of Blackwater northerly through the village of Sunderland to the junction of Highway 7 west of Lindsay.

Completed on Highway 35 this year was a new channelization at the junction of Highway 121 near Fenelon Falls.

One scenic project completed this year on Highway 35 was a new high-level 600-foot structure over the Trent Canal at Rosedale. Work included diversion approaches of approximately one mile plus service roads, pedestrian steps, a new government wharf and entrances to the village of Rosedale. This high-level structure replaced an old single-lane traffic light controlled, swing bridge, and its completion is part of a plan eventually to eliminate swing type bridges over the Trent Canal water system that cause a seasonal traffic hold up.

North of Bobcaygeon on Highway 35 a single-lane structure was demolished and a new structure built over Nogie's Creek. A roadway diversion of one mile was completed with this new structure.

On Highway 2 resurfacing and pavement widening was completed through the village of Newcastle.

On the north side of Highway 401 a new one-mile service road was completed, providing access from the Little Lake township road westerly to connect with adjacent township roads.

Maintenance

During the year, a new patrol garage site and sand stockpiling area was developed at Coboconk to replace the existing one where salt contamination was becoming a problem. Construction of the new five-bay patrol garage at Young's Point was commenced by the Department of Public Works. Completion is expected in the summer of 1964. In addition, three new salt sheds were constructed by day labour at Coboconk, Norwood and Codrington patrol yards. The sand stockpiling area of the Newcastle patrol garage was paved.

Seven contracts for stockpiling crushed gravel were called.

Approximately two miles of hot-mix patching was carried out by contract on various highways in the district. Some 26 miles of surface treatment, and 52 miles of bituminous prime were done mainly on the secondary highways in the north end of the district.

Day labour road construction during both summer and winter resulted in the elimination of two sharp curves on Highway 503 near Head Lake.



"Deslicker" burning off old asphalt prior to re-surfacing (Port Hope District).

The district forestry crew grass-seeded 856,680 square yards, and planted 3,549 trees and shrubs. An extensive program of weed spraying was also carried out. During the winter the crew removed 436 dead or dangerous trees under the winter works program.

Development of the picnic sites at the four service centres on Highway 401 was virtually completed with the seeding of three of them in the fall. The site at Service Centre E-4 was opened to the public in July, and proved very popular.

The sign shop undertook the setting up of a sign inventory for the district, and initiated an annual sign inspection on which the following year's resigning program will be based. They replaced or erected 3,858 signs during the year.

The zone painting crew painted 730 miles of highway during the summer.

A day labour program of bridge painting was undertaken and minor repairs were made to a number of structures throughout the district. As a result of structural damage by high-loaded trucks, the bridges at Hastings on Highway 45, and Belleville Bay on Highway 14 were repaired under contract. In both cases, temporary strengthening using bailey bridging was employed and traffic was reduced to one lane, controlled by traffic signals.

A special system of protection for men working on the pavement of Highway 401 was instituted using advance signs on trailers and a large truck-mounted sign at the site of the work. The system is designed to provide a positive means of warning the travelling public as well as protection for the men working on the pavement.

The new classifications and rates for equipment operators necessitated the setting up of a system for recording the positions and duties of all field personnel.

Negotiations with a number of municipalities were undertaken to establish or extend connecting link agreements. Reconstruction and resurfacing on existing connecting links was carried out by the towns of Trenton, Cobourg, Lindsay, and Picton. The resurfacing contract in the village of Newcastle was called, and supervised by the department.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
12	C.P.R.	Crossing at Myrtle	wig-wag and bell
7A	C.P.R.	Crossing at Bethany	2 flash. signals, bell
12	C.P.R.	Crossing at Myrtle	2 flash. signals, bell
30	C.P.R.	Crossing at Havelock	2 flash. signals, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2	Village of Newcastle connecting link, Beaver Street to Baldwin Street	.20	1963	.20	913.30
7A	Part A — 0.5 mi. east of Caesarea sideroad, easterly to west Jct. Hwy. 35	.....	.....	.....	.....
	Part B — west causeway patching and east causeway resurfacing	9.35	1963	9.35	15,955.37
7, 12 T.C.	0.5 mi. north of Blackwater, north to Jct. Hwy. 7	4.61	1963	4.61	14,353.11
33	Hillier to Consecon	10.66	1963	10.66	16,768.84
35	Trent Canal bridge at Rosedale	0.86	1963	0.86	4,297.87
35, 121	Intersection at Powles' Corners	1.00	1963	1.00	2,932.73
	TOTALS	26.68		26.68	55,221.22

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
36	Nogie's Creek post office to Buckhorn Road, various locations	9.5	24,676.2	369.6
503	Uphill easterly	10.8	28,053.0	425.4
503	Sebright southerly	8.2	21,299.5	323.0
505	Uphill, Victoria Road	10.5	27,273.7	413.6
507	Jct. Hwy. 36, 12.5 mi. north	12.5	32,468.7	492.4
121	Burnt River	1.0	2,597.5	39.4
	TOTALS	52.5	136,369	2,063.4

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
46	Jct. Hwys. 7 and 46 to easterly Don Station	12.2	36,736.2	1,516.4
41	North limits Picton northerly	3.0	9,034.0	372.9
121	South Jct. 121 and 500 to Kinmount	6.0	18,054.0	746.8
503	Sebright easterly	5.7	17,163.7	607.5
	TOTALS	26.9	80,998.9	3,243.6

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
35	Rosedale	1962	1963	Reinforced concrete and steel beam girder
36	0.9 mi. south of village of Nogies Creek	1963	1963	Reinforced concrete and steel beam girder

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
2	Village of Newcastle, connecting link, Beaver Street to Baldwin Street	0.20	905.38
7A	Caesarea easterly 3.46 mi.	1.38	– 10,608.07
			3,710.59
7A	Part A — 0.5 mi. east of Caesarea sideroad, easterly to west Jct.	.....	– 4,728.67
	Hwy. 35		– 8,468.77
	Part B — west causeway patching and east causeway resurfacing	9.35	– 8,940.55
7, 12 T.C.	0.5 mi. north of Blackwater north to the Jct. Hwy. 7	4.61	– 25,460.29
			5,912.24
7	D.H.O. patrol yard 0.5 mi. east of Norwood	.....	6,998.54
12	D.H.O. patrol yard 1.5 mi. north of Greenbank	.....	6,981.70
30	D.H.O. patrol yard 3 mi. north of Codrington	.....	5,993.72
33	Hillier to Consecon	10.66	– 10,052.02
			6,329.03
			7,794.40
35	Trent Canal Bridge at Rosedale	0.51	– 12,752.23
			1,901.22
25, 121	Intersection at Powle's Corners	0.25	– 2,475.09
			1,462.05
36	Nogies Creek 0.9 mi. south of Nogies Creek Village	0.88	7,924.00
36	D.H.O. patrol yard south entrance to Bobcaygeon	.....	5,001.48
401	Service road from Biddy Lake, 3.8 mi. west of Jct. Hwy. 30, westerly	0.98	– 7,286.35
			983.02
401	D.H.O. patrol yard, Jct. Grafton Road and Hwy. 401	.....	10,002.09
503	D.H.O. Area, 1.5 mi. west of Norland	.....	9,687.36
503	D.H.O. patrol yard, 6.5 mi. north of Kirkfield	.....	4,994.30
	TOTALS	28.82	177,353.16

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
46	Patrol 13, Jct. Hwys. 46-35 to Jct. Hwys. 46-505	10.10	16.8
503	Patrol 12, Jct. Hwys. 46-503 to Jct. Hwys. 503-505	16.38	1,617
503	Patrol 13, Jct. Hwys. 503-505 to Jct. Hwys. 503-35	10.38	897.4
505	Patrol 12, Jct. Hwys. 46-505 to Jct. Hwys. 505-503	11.00	229.6
507	Patrol 7, Jct. Hwys. 36-507 to Haliburton county line	21.60	1,629.6
36	Patrol 7, Jct. Hwys. 28-36 to Nogies Creek	18.65	35.0
	TOTALS	88.11	4,425.4

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
7A	From Caesarea easterly 3.46 mi.	3.46	1962	1.38
7, 12 T.C.	0.5 mi. north of Blackwater, north to the Jct. Hwy. 7	4.61	1963	4.61
35	Trent Canal bridge at Rosedale	0.86	1962	0.51

Grading and Culverts (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
36	Nogies Creek, 0.9 mi. south of village of Nogies Creek	0.88	1963	0.88
401	Service road from Biddy Lake, 3.8 mi. west of Jct. Hwy. 30, westerly	0.98	1963	0.98
	TOTALS	10.79		8.36

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
7A	Caesarea sideroad easterly 3.46 mi.	3.46	1962	1.38	2,681.12
7A	Part A — 0.5 mi. east of Caesarea sideroad to west Jct. Hwy. 35	.....	.....	.....	.....
	Part B — west causeway patching and east causeway resurfacing	9.35	1963	9.35	11,733.40
7, 12 T.C.	0.5 mi. north of Blackwater, north to the Jct. Hwy. 7	4.61	1963	4.61	83,001.26
33	Hillier to Consecon	10.66	1963	10.66	3,923.78
35	Trent Canal bridge at Rosedale	0.86	1962	0.51	16,542.68
35, 121	Intersection at Powle's Corners	1.00	1963	1.00	305.69
36	Nogies Creek, 0.9 mi. south of village of Nogies Creek	0.88	1963	0.88	21,176.23
401	Service road from Biddy Lake, 3.8 mi. west of the Jct. Hwy. 30, westerly	0.98	1963	0.98	13,690.88
	TOTALS	31.80		29.37	153,055.04

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
7 T.C.	1 mi. east of Norwood	Salt shed	1963	1963
46	1 mi. west of Jct. Hwys. 46 and 35	Salt shed	1963	1963
30	Department of Highways patrol yard, 2 mi. north of Codrington	Salt shed	1963	1964
28	Department of Highways patrol yard, 1 mi. north of Young's Point	Patrol garage	1963	1964
	Five-foot bay steel construction patrol garage			

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted (122 gals.)	9	.....	.....
Calcium dust layer on gravel roads	.....	18.05	.....
Off-road parks maintained	15	.....	.....
Roads snowploughed and kept open, King's Highways	22	.....	742.24
Roads snowploughed and kept open, Secondary Highways	4	.....	96.79
Roadside picnic places maintained	78	.....	.....
Routine maintenance, King's Highways	.....	.....	742.24
Routine maintenance, Secondary Highways	.....	.....	96.79
Salt for de-icing roads (raw)	.....	9,321.32	.....
Salt in sand, stockpiled	.....	5,479.72	.....
Sand for winter maintenance (sq. yds.)	80,298.1	.....	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (sq. yds.)	85,769.6	.....	.....
Shrubs received and planted this year	2,425	.....	.....
Signs erected or replaced	3,858	.....	.....
Snow fence erected, dismantled, stored	.....	.....	98.5
Snow hedges planted this year (feet)	300	.....	.....
Traffic lights installed this year (temporary)	2	.....	.....
Weed control	.....	.....	496.23
Zone painting on King's Highways (gals.)	10,084	.....	721
Zone painting on Secondary Highways (gals.)	123	.....	9

DISTRICT No. 8—KINGSTON

E. A. CASH, P.Eng., District Engineer

Construction

On November 1, 1963, Highway 401 between Toronto and Kingston became a continuous route when 8.5 miles of concrete paving on the south lane, westerly from Napanee, was opened to traffic. Another large step towards bringing this road to full four-lane status was also taken in the fall, by the awarding of three contracts for the paving, with concrete, of a total of 30 miles of the north lane, between Kingston and Marysville.

There is a shortage of natural gravel in this area, and in order to provide the necessary granular base course materials, limestone rock was quarried and crushed. Substantial progress on these contracts was made during the fall and winter by the production of nearly ¾ million tons of gravel which was placed either on the grade or in stockpiles.

Extrusion of bituminous-type jointing materials during hot weather has frequently caused maintenance problems in the past. Pre-formed cellular plastic strips were used for joint sealing on the most recent stretch of concrete pavement. More time will be required to determine the extent to which this material will solve the problems, but present indications are quite hopeful.

At Kayler's Creek on Highway 2, east of Napanee, a weak structure was replaced by a new concrete bridge, and the same action was taken at Selby Creek Bridge south of Marysville. The contracts were not entirely completed but both bridges were opened to traffic. Pre-fabricated temporary bridges were used at both locations to maintain traffic, and also to permit faster construction through unhindered possession of the bridge site.

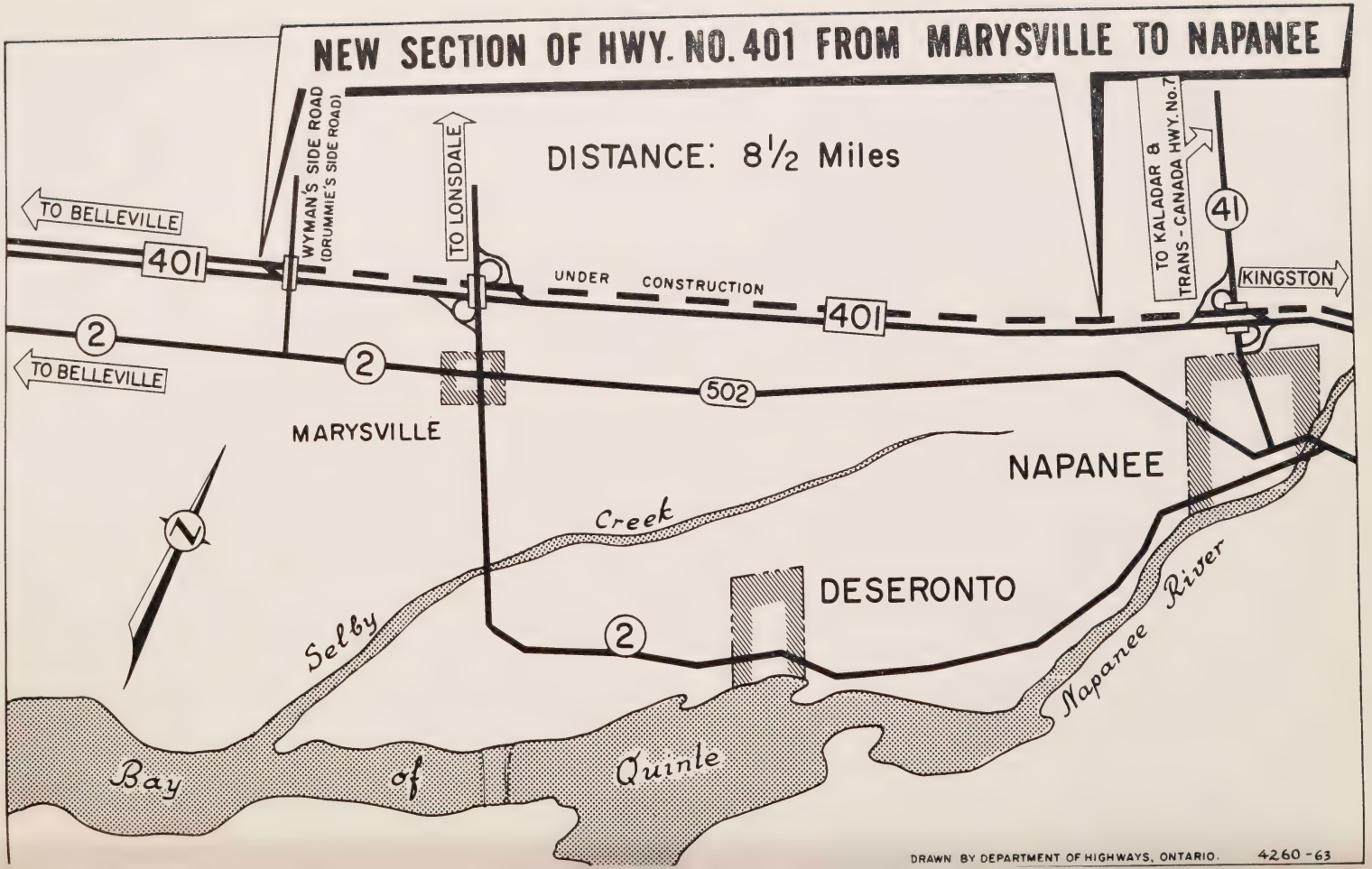
Work commenced on a major grading contract on Highway 2 south of Marysville. Good progress was also made on a grading contract between Forthton and Athens on Highway 42, where a new structure at Glen Elbe Creek was completed largely under winter conditions.

In the hamlet of Delta, the condition of an old masonry arch bridge became quite serious. Since repairs were not practical, a new concrete structure was designed, a contract awarded, and the new bridge was built during the winter. A temporary bridge, necessary to provide a detour, was still in use at the end of the year.

Between Smiths Falls and Port Elmsley, a grading contract, including the structure at Cockburn Creek, was completed and base coat paving was laid. A curve improvement on Highway 29 south of Smiths Falls was graded and covered with base coat paving.

Weather conditions were very favourable for construction in the Madoc area, and this factor enabled good progress to be made on a large grading contract, which will bring the section of Highway 7 between Madoc and Actinolite up to Trans-Canada Highway standards.

Base course paving was laid southerly from Ivanhoe for over 5 miles on Development Road 588, and a grading contract was awarded late in the year, which will complete the reconstruction of the road between Madoc and Foxboro. It will


NEW SECTION OF HWY. NO. 401 FROM MARYSVILLE TO NAPANEE
DISTANCE: 8½ Miles
TO BELLEVILLE
401
WYMAN'S SIDE ROAD (DRUMMIE'S SIDE ROAD)
TO LONSDALE
UNDER CONSTRUCTION
401
TO KALADAR & TRANS-CANADA HWY. No. 7
41
KINGSTON
2
TO BELLEVILLE
2
502
MARYSVILLE
NAPANEE
N
Creek
DESERONTO
Selby
2
Napanee River
Bay of Quinte
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO. 4260-63



Paving on Highway 401 between Marysville and Napanee (Kingston District).

connect with the Foxboro By-pass and the section of Highway 14 between Foxboro and Highway 401 which was regraded and paved except for the surface course.

A curve revision on Highway 38, which had been graded by the department's own forces, was paved by contract.

Several smaller contracts to improve intersections or solve maintenance problems were completed during the year. The most important was on Highway 2 west of Kingston, where rain water in a rock cut on a steep hill caused serious shoulder erosion. This was overcome by the installation of a storm sewer system, curb-and-gutter and a paved shoulder.

In some instances the invitation bid procedure was used to cope with urgent matters.

Reconstruction of Highway 33 through the village of Bath, under a connecting link agreement, was supervised by the department.

Maintenance

Maintenance of all highways in the district was carried out as required. The amount of snowploughing, sanding and salting carried out was much less than in past years.

The site of a planned new patrol garage on Highway 38 north of Verona was graded, and the Crystal Beach yard west of Brockville was paved. When landscaping is carried out this coming year, the Crystal Beach patrol yard, providing facilities for the staff and equipment of two patrols, will be completed.

Pavement cracking was treated this year with a new fine-graded cold-laid mix which proved very satisfactory. Where failures were more extensive, 12,880 tons of hot-mix patching were placed under two contracts.

Sections of Highways 41, 42 and 95 were surface treated, and 53,450 tons of crushed gravel were stockpiled for shoulder and roadway maintenance.

On highways which had been reconstructed, the maintenance staff seeded 180,532 square yards of right-of-way and planted 11,149 trees and shrubs.

Under winter works projects, day labour construction was carried out on two miles of Highway 96, Wolfe Island, and 0.5 mile of Secondary Highway 509. The visibility at an intersection on Highway 33 south of Stirling was considerably improved under one other winter works project.

The ferry service linking the counties of Prince Edward and Lennox Addington at Glenora on Highway 33 carried a total of 255,296 vehicles in 1963–64; an increase of 27,379 over the previous year.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
14	C.P.R.	Havelock subdivision, mileage 79.99	2 flash. lights, 1 bell
2	C.N.R.	Gananoque subdivision, mileage 206.95	2 gates, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2	Village of Shannonville	0.13	1963	0.13	187
2	Selby Creek, 2 mi. south of Marysville	0.21	1963	0.21	469
2	Kayler's Creek bridge, east of Napanee	0.49	1962	0.49	1,760
2	Patrol yard, 5 mi. west of Brockville	.....	1963	.....	681
7 T.C.	Kaladar, easterly 8.84 mi.	10.90	1962	10.90	25,901
29	Curve revision, south of Smiths Falls	0.98	1963	0.98	2,348
38	St. George's Lake Road intersection, Hwy. 38	.....	1963	.....	47
38	Eagle Lake diversion, East Tichborne	0.79	1963	0.79	1,271
42	Forthton westerly to Athens	4.85	1963	.....	187
42	Beverley Creek delta	.....	1963	.....	55
43	Port Elmsley to Smiths Falls	5.06	1963	5.06	8,681
401	West of Marysville, east to Napanee	10.00	1962	1.48	5,639
401	Ivy Lea Village Road	0.22	1963	0.22	609
401	6.8 mi. east Napanee	0.34	1963	0.34	293
	TOTALS	33.97		20.60	48,128

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
2	Jct. Hwy. 16 to Trenton	113.64	113.64	470
7 T.C.	Jct. Hwy. 43 to Marmora	80.23	80.23	135
14	Jct. Hwy. 401 to Marmora south limits	26.63	26.63	66
15	Jct. Hwy. 2 to Smiths Falls	55.49	55.49	80
29	Brockville to Smiths Falls	28.93	28.93	76
32	Gananoque to Jct. Hwy. 15	11.03	11.03	75
33	Kingston-Glenora Ferry, Trenton-Stirling	45.52	45.52	159
37	Jct. Hwy. 401 to Jct. Hwy. 7	27.50	27.50	82
38	Jct. Hwy. 2 to Jct. Hwy. 7	45.24	45.24	684
41	Napanee to Jct. Hwy. 7	32.12	32.12	50
42	Jct. Hwy. 29 to Westport	33.45	33.45	144
43	Smiths Falls to Jct. Hwy. 7	11.48	11.48	35
95, 96	Wolfe Island	27.09	27.09	177
137	Hwy. 401 to international border	1.35	1.35	16
401	Jct. Hwy. 16 to Trenton	147.60	147.60	128
502	Napanee to Jct. Hwy. 2, Marysville	8.54	8.54	37
509	Jct. Hwy. 7 to Snow Road	12.06	12.06	4
	TOTALS	707.90	707.90	2,418

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
2	At Barriefield, 2.5 mi. east Jct. Hwys. 2 and 15	0.38	1,002
7 T.C.	East of Maberly	.....	55
14	Resurfacing existing highway, Foxboro Village	.....	4,765
7-14-33-37	Various locations	.....	4,797
2-15-32-38-43			
401	Various locations	.....	7,038
	TOTALS	2.32	17,677

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
41	Kaladar southerly	13.0	29,250	1,560
42	Delta to Forfar	6.0	13,500	540
95, 96	Wolfe Island	7.0	15,760	796
	TOTALS	26.00	58,510	2,896

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
2	Kayler's Creek bridge	1962	1963	Prestressed beam
2	Selby Creek, 2 mi. south of Marysville	1963	1963	Rigid frame
42	Glen-Elbe Creek, 2.0 mi. west of Hwy. 29	1963	.....	Rigid frame
42	Beverley Creek at Delta	1963	.....	Rigid frame
43	Cockburn Creek, west of Smiths Falls	1963	1963	Rigid frame
401	Wyman's sideroad west of Marysville	1961	1963	Prestressed beam

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64	Pave. Width
401	West of Marysville, east to Napanee	10.0	1963	0.33	1,336	11 Ft.

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Sq. Yds. Placed 1963–64	Pave. Width
401	2 mi. west of Marysville, easterly to Napanee	10.0	1962	8.50	121,035	24 Ft.
401	6.8 mi. east of Hwy. 41	.013	1963	.013	186	24 Ft.
	TOTALS	10.013		8.513	121,221	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
2	Kayler's Creek bridge	0.49	612
2	D.H.O. patrol yard, Lansdowne	.....	4,995
7 T.C.	Kaladar easterly, including D.H.O. patrol yard, Arden sideroad and commercial entrances, east Kaladar	8.84	18,719
14	Resurfacing existing highway, Foxboro Village	1.94	1,584
29	Curve revision, 3 mi. south of Smiths Falls	0.98	8,096
38	Old Hwy. 38, from Sydenham Road to new Hwy. 38	1.45	96
43	Smiths Falls west limits, westerly to Port Elmsley east limits	4.94	5,997
43	Port Elmsley to Smiths Falls	5.06	13,016
401	Napanee to Odessa	12.35	22,746
401	2 mi. west of Marysville, east to Napanee	10.00	40,377
Secondary Road			
502	D.H.O. patrol yard, Marysville	.....	10,000
	TOTALS	46.05	124,238

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
2	Jct. Hwy. 16 to Trenton	113.64	4,074
7 T.C.	Jct. Hwy. 43 to Marmora	80.23	8,799
14	Jct. Hwy. 401 to Marmora south limits	26.63	680
15	Jct. Hwy. 2 to Smiths Falls	55.49	3,040
29	Brockville to Smiths Falls	28.93	880
32	Gananoque to Jct. Hwy. 15	11.03	635
33	Kingston-Glenora Ferry, Trenton to Stirling	45.52	1,066
37	Jct. Hwy. 401 to Jct. Hwy. 7	27.50	984
38	Jct. Hwy. 2 to Jct. Hwy. 7	45.24	325
41	Napanee to Jct. Hwy. 7	32.12	400
42	Jct. Hwy. 29 to Westport	33.45	2,028
43	Smiths Falls to Jct. Hwy. 7	11.48	546
95, 96	Wolfe Island	27.09	4,584
137	Hwy. 401 to international border	1.35	40
401	Jct. Hwy. 16 to Trenton	147.60	1,625
Secondary Road			
502	Jct. Hwy. 2, Napanee to Marysville	8.54	700
509	Jct. Hwy. 7 to Snow Road	12.06	4,261
	TOTALS	707.90	34,667

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
2	Village of Shannonville	0.13	1963	0.13
2	At Barriefield, 2.5 mi. east of Jct. Hwys. 2 and 15	0.38	1963	0.38
7 T.C.	From east limits Madoc By-pass, easterly to Jct. Hwy. 37	6.45	1963	2.25
29	Curve revision, 3 mi. south of Smiths Falls	0.98	1963	0.98
41, 2	From Hwy. 401 southerly, including C.N.R. overhead bridge, 0.2 mi. south of Marysville	4.08	1963	0.35
42	Forthton westerly to Athens	4.85	1963	0.52
43	Smiths Falls west limits, westerly to east limits Port Elmsley	4.94	1962	4.74
401	Hwy. 401, 6.8 mi. east of Hwy. 41	0.34	1963	0.34
	TOTALS	22.15		9.69

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2	Kayler's Creek bridge, 4.1 mi. east of Napanee	0.49	1962	0.49	6,875
2	Eastview Park entrance, 5.0 mi. east of Kingston	.....	1963	.....	153
2	Crystal Beach patrol yard, 5.0 mi. west of Brockville	.....	1963	.....	1,490
7 T.C.	Kaladar easterly, including D.H.O. patrol yard to Arden side and commercial entrances	8.84	1962	5.54	7,819
7 T.C.	East limits Madoc By-pass, east to Jct. Hwy. 37	6.45	1963	2.25	29,030
29	Curve revision, 3 mi. south of Smiths Falls	0.98	1963	0.98	13,052
38	St. George's Lake Road, Olden Twp. intersection Hwy. 38	.....	1963	.....	200
38	Eagle Lake diversion, 1.5 mi. east Tichborne	0.79	1963	0.79	6,800
38	Old Hwy. 38, Sydenham Road to new Hwy. 38	1.45	1963	0.12	1,345
42	Forthton westerly to Athens	4.85	1963	0.52	12,214
43	Smiths Falls west limits to Port Elmsley east limits	4.94	1962	4.74	63,977
95	Marysville easterly 4.5 mi., Wolfe Island	4.50	1963	2.20	25,645
401	2 mi. west Marysville, east to Napanee	10.00	1962	3.50	97,302
401	Ivy Lea Village road	0.22	1963	0.22	1,046
401	9.7 mi. east of Napanee to Hwy. 38 (north lanes)	9.70	1963	0.56	18,072
401	Hwy. 41, Napanee east 9.7 mi. (north lanes)	9.70	1963	5.30	65,529
401	2 mi. west of Marysville to Napanee (north lanes)	99.9	1963	4.00	61,000
401	Hwy. 401, 6.8 mi. east of Hwy. 41 (south lane)	0.34	1963	0.34	3,387
Secondary Road					
509	Snow Road southerly	.50	1963	.50	13,000
	TOTALS	73.74		32.05	427,936

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
2	At Barriefield, 2.5 mi. east Jct. Hwys. 2 and 15	0.38	1963	0.38	2,727
14	Resurfacing existing highway, Foxboro Village	1.94	1963	1.94	869
33	McEwen Drive, 1.5 mi. west of Kingston	.....	1963	.....	1,620
	TOTALS	2.32		2.32	5,216

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
33	Addition, Patrol Yard, Bath	Office	1963	1963
14	Frame Building, Patrol Yard, Stirling	Salt shed	1963	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		521	
Off-road parks maintained	9		
Roads snowploughed and kept open, King's Highways			685.86
Roads snowploughed and kept open, Secondary Highways			20.13
Roadside picnic places maintained	63		
Salt for de-icing roads (raw)		10,426	
Salt in sand, stockpiled		5,109	
Sand for winter maintenance (sq. yds.)	30,939		
Scale houses maintained	3		
Seeding by department's forces (sq. yds.)	180,532		
Shrubs received and planted this year	11,149		
Signs erected or replaced	3,221		
Snow fence erected, dismantled, stored			34.00
Weed control (gals.)		825	774
Zone painting on King's Highways (gals.)	10,502		841
Zone painting on Secondary Highways (gals.)	233		20.13

April 1, 1963 to March 31, 1964

FERRY "QUINTE"						FERRY "LOYALIST"						TOTALS		
												Both Ferries 1963-64		
Month	Days Worked	Trips	Cars	Trucks	Total	Month	Days Worked	Trips	Cars	Trucks	Total	Cars	Trucks	Totals
April	Not operating					April	30	1,331	15,909	907	16,816	15,909	907	16,816
May	26	993	8,953	422	9,375	May	26	941	10,213	746	10,959	19,166	1,168	20,334
June	30	1,328	12,216	484	12,700	June	30	1,000	12,402	715	13,117	24,618	1,199	25,817
July	31	1,473	18,706	471	19,177	July	31	1,069	18,773	823	19,596	37,479	1,294	38,773
August	31	1,466	19,701	441	20,142	August	31	1,084	20,134	886	21,020	39,835	1,327	41,162
September	30	1,351	11,816	448	12,264	September	30	995	11,279	784	12,063	23,095	1,232	24,327
October	31	1,353	10,614	497	11,111	October	31	1,007	9,862	710	10,572	20,476	1,207	21,683
November	30	1,268	7,297	397	7,694	November	30	933	6,302	668	6,970	13,599	1,065	14,664
December	31	978	5,141	223	5,364	December	31	979	6,264	574	6,838	11,405	797	12,202
January	31	340	1,338	33	1,371	January	31	1,024	10,020	965	10,985	11,358	998	12,356
February	29	256	906	14	920	February	29	953	10,497	760	11,257	11,403	774	12,177
March	31	296	1,256	7	1,263	March	31	1,069	12,824	898	13,722	14,080	905	14,985
Totals	331	11,102	97,944	3,437	101,381	Totals	361	12,385	144,470	9,436	153,915	242,423	12,873	255,296

"QUINTE"

Peak Traffic: August

Trips	1,466
Cars	19,701
Trucks	441
Total days worked	331
Total cars carried	97,944
Total trucks carried	3,437
Total trips	11,102

"LOYALIST"

Peak Traffic: August

Trips	1,084
Cars	20,134
Trucks	886
Total days worked	361
Total cars carried	144,470
Total truck carried	9,436
Total trips	12,385

DISTRICT No. 9—OTTAWA

L. E. WALKER, P.Eng., District Engineer

Construction

Ottawa Queensway, Highway 17 T.C.H.

On Stage III, earth grading, work on adjacent city streets and five remaining structures were completed. Only the easterly 4,400 feet of concrete paving to O'Connor Street remains for this stage to be completed in its entirety.

Two bridges on Stage IV were completed together with grading as far as the Rideau Canal. A start was made on the canal and Main Street bridges and piers were poured for the former structure.

Highway 17 — Village of Carp

This contract consisted of sub-excavation, backfill, storm sewers, curb-and-gutter, sidewalks, and hot-mix pavement and was completed by July.

Highway 17 — Meath to Pembroke (9.4 miles)

Wearing course for this project was laid early in the summer and the contract was completed by June.

Highway 17 — Kennedy's Corners to Antrim (16.7 miles)

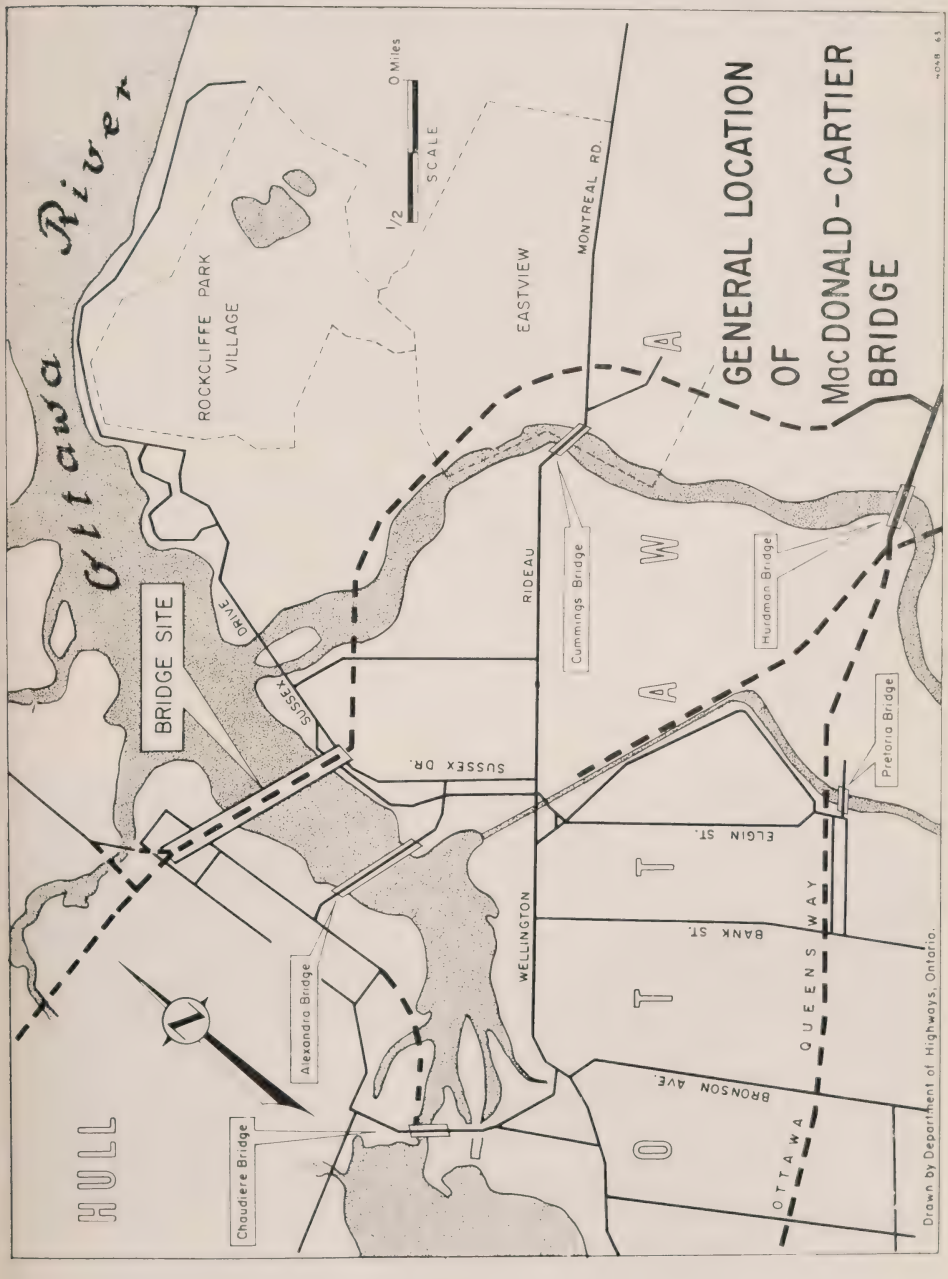
This was essentially a resurfacing project and with the laying of wearing course early in the summer. The contract was completed by June.

Highway 17 — Carp to Antrim (9.6 miles)

Clearing and grubbing for this project was completed by day labour during 1962. Grading by contract is now well advanced, and a start has been made on laying granular base where called for at the west end of the project. This contract will be completed by August 1964.



Paving on The Ottawa Queensway (Ottawa District).


GENERAL LOCATION OF MacDONALD-CARTIER BRIDGE
Ottawa River
HULL
OTTAWA
BRIDGE SITE
ROCKCLIFFE PARK VILLAGE
EASTVIEW
MONTREAL RD.
RIDEAU
SUSSEX DR.
SUSSEX DRIVE
WELLINGTON
ELGIN ST.
BANK ST.
QUEENS WAY
BRONSON AVE.
OTTAWA
Chaudiere Bridge
Alexandra Bridge
Cummings Bridge
Hurdman Bridge
Pretoria Bridge
0 Miles
1/2
SCALE
Drawn by Department of Highways, Ontario.

Highway 29 — Carleton Place to Almonte (5.9 miles)

Earth grading, granular base and laying of hot-mix pavement and binder course was carried out during 1963. The contract was completed by December.

Highway 29 — At Smiths Falls

This contract has eliminated a bad S curve at the C.N.R. crossing.

Highways 15 and 7 — Carleton Place to Ashton Station (5.3 miles)

This project consisted of resurfacing, granular shouldering and minor channelization changes at the intersection of Highway 29.

Highway 401

Concrete paving from nine miles east of Highway 31 to Toll Gate Road at Cornwall, a distance of 18 miles, was completed. This section was opened to traffic at the end of October. Concrete paving of the west bound lane from Toll Gate Road to one mile east of Lancaster was 40 per cent completed and a further paving contract, from one mile east of Lancaster easterly 4.4 miles was awarded. These contracts will be completed this summer, as well as grading from Lancaster to the Quebec border which was almost completed during 1963.

Grading contracts for the west-bound lanes from Highway 16 to Iroquois were awarded, and these contracts will be completed during 1964.

Twenty-three bridges were under construction on Highway 401 during the year, fifteen of which were completed.

Maintenance

An 18-mile section of Highway 401, 4 lanes, was opened from the Aultsville sideroad to Cornwall east limits, in October.



Construction of approaches to The Macdonald-Cartier Bridge (Ottawa District).

Yard development was started on a new patrol yard immediately north of Highway 401 at Long Sault. The yard was graded under an invitation bid contract and a new standard salt shed erected during the winter by day labour forces.

A new four-bay standard metal garage was erected and taken over at Shields Crossing on Highway 17, 3 miles west of Cobden.

A new salt shed was constructed at the Carleton Place patrol yard.

Approximately 3.3 miles of asphalt pavement on Highway 31 south of Winchester which had flushed was burned, using the department's de-slicker machine. Results at the time of writing seem to be satisfactory.

An abandoned reinforced concrete bridge over an abandoned railroad line at L'Orignal on Highway 17 (T.C.) was demolished by the use of explosives. This was a special project to determine the effects of explosives in demolishing concrete structures on adjacent buildings and structures.

Technical advice and assistance with respect to explosives was supplied by private industry. Vibration and shock data were taken and processed by the Ontario Research Foundation and the Buildings Division of the National Research Council.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
17	C.P.R.	Renfrew	2 flash. lights, bell
17	C.P.R.	Arnprior	2 flash. lights, bell
17	C.N.R.	Arnprior	2 flash. lights, bell
29	C.N.R.	Smiths Falls	2 flash. lights, bell
34	C.P.R.	Glen Gordon	2 flash. lights, bell
34	C.N.R.	Lancaster	2 flash. lights, bell
401	C.N.R.	Long Sault Road	1 overpass built

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
17	Meath to Pembroke	9.40	1962	3.8	24,574
29	Carleton Place to Almonte	5.82	1963	5.82	9,726
Q'way	Bronson to O'Connor*	.....	1962	.....	6,638
Q'way	Carling Avenue to O'Connor*	.....	1963	.....	9,691
Q'way	O'Connor to Elgin*	.....	1963	.....	4,613
	Macdonald-Cartier bridge, Stage 1, Ontario approach*	0.41	1963	0.41	4,692
401	From 9 mi. to 14 mi. east of Hwy. 31**	.....	1962	.....	6,600
401	From 14 mi. east of Hwy. 31 easterly 8 mi.**	.....	1962	.....	6,302
401	22 mi. east of Hwy. 31 easterly 4.3 mi.**	.....	1963	.....	12,972
401	Toll Gate Road to 1.0 mi. east of Lancaster**	.....	1962	.....	1,517
17	Village of Carp	0.89	1963	0.89	4,664
29	Smiths Falls northerly, 1.02 mi.	1.02	1963	1.02	4,753
Q'way	Michael Street, service road	.....	1963	.....	497
Q'way	Hwy. 15 to Carling Avenue***	4.13	1963	4.13	9,882
	TOTALS	21.67		16.07	107,121

* Portions of city streets only.
** Interchange legs only.
*** Shoulder paving.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
17	From Chute-a-Blondeau to Hwy. 17 T.C.	1.7	6,515	161
508	Burnstown westerly	0.9	4,542	126
	TOTALS	2.6	11,057	287

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
17	From Carp to Antrim	16.70	17,613
7, 15	Carleton Place to Ashton	5.31	17,370
	TOTALS	22.01	34,983

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
Q'way	Bridge No. 18	1962	.....	Reinforced concrete
Q'way	Bridge No. 20	1962	.....	Reinforced concrete
Q'way	Bridge No. 22	1962	.....	Reinforced concrete
Q'way	Bridge No. 21	1962	.....	Reinforced concrete
Q'way	Bridge No. 37	1962	.....	Reinforced concrete
Q'way	Bridge No. 23	1962	.....	Reinforced concrete
	Macdonald-Cartier Bridge, Sussex Dr. overpass	1963	.....	Comp. reinf. conc. and prestressed girder
401	Aultsville County Road	1962	1963	Comp. reinf. conc. and prestressed girder
401	Long Sault Road	1962	1963	Reinforced concrete
401	C.N.R. overhead, Long Sault Road	1962	1963	Reinforced concrete
401	Lunenburg County Road	1962	1963	Reinforced concrete
401	Avonmore Road	1962	1963	Reinforced concrete
	Post Road	1961	1963	Reinforced concrete
	Division Road	1961	1963	Reinforced concrete
401	Brookdale Avenue	1962	1963	Reinforced concrete
401	St. Andrew's Road	1962	1963	Reinforced concrete
401	Raison River	1962	1962	Reinforced concrete
401	McConnell	1962	1963	Reinforced concrete
401	Hwys. 2 and 34	1962	1963	Reinforced concrete
401	Westley Creek	1962	1963	Reinforced concrete and steel girders
2	Sutherland Creek	1962	1963	Reinforced concrete
401	Sutherland Creek, twin structures	1962	1963	Reinforced concrete and steel girders

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Sq. Yds. Placed 1963–64	Pave. Width
401	From 9 mi. east of Hwy. 31 to 14 mi. east	5.3	1962	2.30	67,947	24 ft. dual lane
401	From 14 mi. east of Hwy. 31 easterly 8.2 mi.	8.18	1963	8.18	105,233	24 ft. dual lane
401	From 22 mi. east of Hwy. 31 easterly 4.3 mi.	4.28	1963	4.28	129,822	24 ft. dual lane
401	From Toll Gate Rd. at Cornwall to 1 mi. east of Lancaster	13.82	1962	7.00	88,556	24 ft. single lane

Concrete Pavement (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Sq. Yds. Placed 1963–64	Pave. Width
Q'way	From Carling Avenue east. to O'Connor	3.40	1963	2.60	109,027	36 ft. dual lane
	TOTALS	34.98		24.36	500,585	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
7	Carleton Place to Ashton	5.31	19,872
17	Kennedy's Corners to Antrim	16.70	6,792
29	Smiths Falls northerly 1.02 mi.	1.02	2,517
29	Carleton Place to Almonte	5.82	11,594
17	Shield's Crossing and Goshen patrol yards (Stockpile)		9,982
31	Greely and Winchester patrol yards (Stockpile)		8,941
43	Avonmore patrol yard (Stockpile)		8,002
401	From 9.0 mi. to 14.0 mi. east of Hwy. 31	5.30	41,923
401	From 14.0 mi. east of Hwy. 31, easterly 8.18 mi.	8.18	49,529
401	From 22.0 mi. east of Hwy. 31, easterly 4.3 mi.	4.28	22,408
	TOTALS	46.61	181,560

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
17 T.C.	Var. Loc., Quebec Border to Pembroke	172	5,163
34	Var. Loc., Hawkesbury to Lancaster	39	206
43	Var. Loc., Alexandria to Smiths Falls	81	1,427
2	Var. Loc., Quebec Border to Johnstown	71	1,268
401	Var. Loc., Aultsville to Johnstown	27	339
31	Var. Loc., Ottawa to Morrisburg	48	2,622
16	Var. Loc., Ottawa to Johnstown	58	826
7	Var. Loc., Ottawa to Perth	58	864
15B	Var. Loc., Stittsville to Ashton	12	117
15	Var. Loc., Carleton Place to Smiths Falls	16	231
29	Var. Loc., Arnprior to Carleton Place	27	18
44	Var. Loc., Almonte to Carp	13	17
508	Var. Loc., Burnstown to Black Donald	23	2,572
511	Var. Loc., Brightside to Calabogie	20	1,400
	TOTALS	665	17,070

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
17	Village of Carp	0.89	1963	0.89
17	Hwy. 44 to Antrim	9.27	1963	5.00
29	Smiths Falls northerly 1.02 mi.	1.02	1963	6.04
29	Carleton Place to Almonte	5.92	1963	5.92
401	1 mi. east of Lancaster, easterly 5 mi.	5.28	1962	2.11
401	Quebec boundary westerly 2.86 mi.	2.86	1962	1.72
401	From Hwy. 16 to Cardinal county road	5.33	1963	2.00
401	From Cardinal county road to Carmen Road at Iroquois	4.90	1963	2.00
Q'way	Bell Street to O'Connor Street	0.90	1962	0.84
Q'way	O'Connor Street to Elgin Street	0.22	1963	0.22
Q'way	Elgin Street to Main Street	0.20	1963	0.10
	Macdonald-Cartier bridge, Stage I, Ontario approach.	0.41	1963	0.41
	TOTALS	37.20		27.24

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
17	Village of Carp	0.89	1963	0.89	12,350
29	Smith Falls, northerly 1.02 mi.	1.02	1963	1.02	15,818
29	Carleton Place to Almonte	5.92	1963	5.92	59,310
401	14 mi. east of Hwy. 31, easterly 8.18 mi.	8.18	1962	3.91	94,667
401	From 22 mi. east of Hwy. 31, easterly 4.3 mi.	4.30	1963	4.30	130,314
401	From Toll Gate Road at Cornwall to 1.0 mi. east of Lancaster	13.82	1962	8.43	235,967
401	From 1.0 mi. east of Lancaster, easterly 4.4 mi.	4.40	1963	3.00	28,050
Q'way	From Carling Avenue easterly to O'Connor	3.40	1963	2.60	68,934
	Macdonald-Cartier bridge, Stage I, Ontario approaches	0.41	1963	0.41	12,244
	Totals	42.34		30.48	657,654

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	Hawkesbury (L'Orignal)	Garage and office	1962	1963
17	Cobden	Garage and office	1963	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted (38 gals.)	2		
Off-road parks maintained	7		
Roads snowploughed and kept open, King's Highways			694.67
Roads snowploughed and kept open, Secondary Highways			43.09
Roadside picnic places maintained	47		
Routine maintenance, King's Highways			694.67
Routine maintenance, Secondary Highways			43.09
Salt for de-icing roads (raw)		13,000	
Salt in sand, stockpiled		1,265	
Sand for winter maintenance		34,550	
Scale houses maintained	1		
Seeding by department's forces (acres)	455		
Shrubs received and planted this year	3,624		
Signs erected or replaced	4,852		
Weed control			463
Zone painting on King's Highways (gals.)	9,780		873
Zone painting on Secondary Highways (gals.)	149		17
Zone painting, Development Roads (gals.)	616		35

DISTRICT No. 10—BANCROFT

J. E. CALLAGHAN, P.Eng., District Engineer

Construction

Grading of Highway 41 from Eganville to Perrault, grading of Secondary Highway 500 from Hermon to McArthur's Mills and grading and paving of Highway 62 from 8.5 to 15 miles north of Bannockburn were completed during the summer.

Grading, paving and installation of storm water sewers was completed on Highways 60 and 62 in the village of Barry's Bay. Grading of Highway 62 from Pembroke westerly 4.6 miles was completed in the fall. The structure over the Deer River at Coe Hill on Secondary Highway 620 was opened to traffic in the fall. Grading of Highway 60 from Wilno to Killaloe was nearly completed before winter.

During the summer and winter day labour construction was carried out on the following Secondary Highways: 500, 504, 506, 515, 517, and 620.

Maintenance

During the year construction was completed on a new four-bay metal patrol garage and Madawaska and construction was commenced on a four-bay metal patrol garage at Ormsby. New wells were drilled at Pembroke and Jack's Lake patrol yards.

Approximately 25.7 miles of highway were surface treated with limestone chips.

Bituminous prime dust layer was applied to approximately 90.5 miles of secondary highways.

Zone painting was completed over approximately 455 miles.

More than 982,520 square yards of right-of-way were seeded.



Bridge over Madawaska River on Highway 17 (Bancroft District).

Approximately 252.75 miles of right-of-way were sprayed with weed and brush chemicals.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
41	Indian River bridge and approaches, town of Pembroke	0.66	1963	0.66	2,867.21
41	2 mi. south of Pembroke, Shady Nook	0.25	1963	0.25	252.71
62	8.5 mi. north of Bannockburn to Steenburg-St. Ola Road	6.42	1963	6.42	9,618.23
62	Jct. Hwy. 62 and Sec. Hwy. 620	0.25	1963	0.25	509.77
60, 62	Village of Barry's Bay	1.03	1963	1.03	4,988.05
620	Deer River bridge at Coe Hill	0.55	1963	0.55	1,406.64
	TOTALS	9.16		9.16	19,642.61

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
500	Village of Denbigh	.25	0.25	400

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
62	Hwy. 60 north to Killaloe	3.0	9,254	266.75
500	Bancroft easterly	7.0	29,267	906.75
	80 mi. east of Bancroft to Hermon	6.5		
504	Apsley to Glen Alda	15.0	46,659	1,547.40
506	3 mi. east of Hwy. 41 to Plevna	19.0	46,340	1,689.45
513	Dacre to Caldwell	10.0	22,072	925.05
515	2 mi. south of Hwy. 62, southerly	5.0	11,213	500.55
517	Combermere to Carlow Road	9.0	16,504	708.90
523	6 mi. south of Madawaska, southerly	7.0	14,302	491.25
620	3 mi. east of Apsley, easterly	9.0	23,502	576.00
	TOTALS	90.5	219,113	7,612.10

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963-64
62, 28	Village of Bancroft	1.6	4,590	998.64
62	7 mi. east of Maynooth to 9 mi. east of Maynooth	2.0	4,950	1,081.86
512	Eganville to Cormac	13.1	35,892	1,047.31
521	Traymore to Bonnechere P.O.	9.0	20,278	662.00
	TOTALS	25.7	65,710	3,789.81

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
500	Little Mississippi River bridge, McArthur's Mills	1962	1963	Reinforced concrete
620	Deer River bridge, Coe Hill	1963	1963	Reinforced concrete, prestressed beams

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
28	Apsley patrol yard*	.....	9,999.98
41	Cloyne patrol yard*	.....	7,997.00
41	Eganville patrol yard*	.....	5,999.78
41	Eganville to Perrault	6.36	11,011.14
41	Indian River bridge at Pembroke	1.86	2,742.53
60	Madawaska patrol yard*	.....	4,998.62
60	Village of Barry's Bay	1.62	22,617.84
60	Wilno to Killaloe	6.20	80,913.00
62	8.5 mi. north of Bannockburn to Steenburg	6.42	44,172.64
62	Maynooth patrol yard*	.....	7,987.54
62	Combermere patrol yard*	.....	8,002.12
62	Pembroke Westerly	4.68	64,727.58
500	Hermon to McArthur's Mills	3.93	33,901.83
620	Deer River bridge at Coe Hill	0.55	6,402.00
	TOTALS	31.62	311,473.00

* Stockpiled

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
41	2 mi. south of Pembroke to Shady Nook	.25	700
60	Jct. of new and old Hwy. 127	.25	1,900
500	Village of Denbigh	.25	1,140
500	2 mi. west of Hardwood Lake	.15	478
506	Vicinity of Marble Lake	.25	2,320
515	2 mi. south of Hwy. 62, southerly	.25	11,568
620	2 mi. west of Coe Hill	.25	5,176
620	Vicinity of Chandos Lake	.50	8,796
	Various locations throughout the district		21,180
	TOTALS	2.15	53,258

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
41	Eganville southerly	6.36	1962	1.59
41	2.0 mi. south of Pembroke to Shady Nook	.25	1963	.25
60	Village of Barry's Bay	1.60	1963	1.60
60	Wilno to Killaloe	6.20	1963	6.20
62	From 8.5 mi. north of Bannockburn to St. Ola Road	6.42	1962	.42
62	Pembroke westerly	4.68	1963	4.68
500	Hermon to McArthur's Mills	3.93	1962	1.81
506	Vicinity of Marble Lake	.25	1963	.25
506	Village of Plevna	.25	1963	.25
515	Combermere to Jewelville	2.16	1960	.16
515	1 mi. south of Hwy. 62, southerly	1.25	1963	1.25
620	Glen Alda to Chandos Lake	4.00	1959	.40
620	Vicinity of Bott's Lake	.50	1963	.25
620	Deer River bridge, Coe Hill	.55	1963	.55
	TOTALS	38.40		19.66

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
41	Eganville southerly	6.36	1962	1.59	41,919
60	Village of Barry's Bay	1.60	1963	1.60	38,003
60	Wilno to Killaloe	6.20	1963	6.20	207,620
62	8.5 mi. north of Bannockburn to St. Ola Road	6.42	1962	3.60	90,741
62	Pembroke westerly	4.68	1963	4.68	177,671
500	Hermon to McArthur's Mills	3.93	1962	3.93	113,282
506	Vicinity of Marble Lake	.25	1963	.25	36,198
515	2 mi. south of Hwy. 62, southerly	.25	1963	.25	6,042
620	Deer River bridge, Coe Hill	.55	1963	.55	21,596
620	Vicinity of Chandos Lake	.50	1963	.50	32,010
	TOTALS	30.74		23.15	765,082

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
60	Madawaska	Metal patrol garage	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		160	
Off-road parks maintained	24		
Roads snowploughed and kept open, King's Highways			411.94
Roads snowploughed and kept open, Secondary Highways			194.15
Roadside picnic places maintained	2		
Routine maintenance, King's Highways			411.94
Routine maintenance, Secondary Highways			194.15
Salt for de-icing roads (raw)		3,706,985	
Salt in sand, stockpiled		1,957,525	
Sand for winter maintenance		55,804	
Scale houses maintained	2		
Seeding by department's forces	982,520 sq. yds.		
Shrubs received and planted this year	5,000		
Signs erected or replaced	2,422		
Snow fence erected, dismantled, stored			25.0
Weed control			252.75
Zone painting on King's Highways			400.74
Zone painting on Secondary Highways			54.80

DISTRICT No. 11—HUNTSVILLE

E. H. JONES, P.Eng., District Engineer

Construction

On Highways 35 and 60, from the junction of Highway 11B easterly, the grading and hot-mix paving of 7.39 miles was completed and a contract awarded and work started on the next 5.6 miles. This included three new structures, Boyne River No. 2, Boyne River No. 3 and the Cooper Lake Creek. This will complete the reconstruction of Highways 35 and 60 to the junction east of Dwight. Also on Highway 60, in Algonquin Park, the last seven miles was paved with hot-mix, to complete the reconstruction of this highway to the district boundary.

On Highway 121, west of the village of Haliburton, a new structure and approaches was completed. This eliminated the sharp approaches and one-way structure which has existed for many years.

On Highway 12, at the narrows between Lakes Simcoe and Couchiching, work was started on a new high-level structure and approaches to span the Trent Canal System and thus eliminate the existing swing bridge. This, when completed, will eliminate traffic congestion caused by the heavy water traffic during the summer months.

On Highway 118 the Milford Bay By-pass was completed and paved and opened to traffic. This comprised a distance of 5.86 miles and completes the reconstruction from Bracebridge to the west of the village of Milford Bay. This section was also mulch seeded by contract and was the first of its kind in this district.

During the year, as in the past, the district has carried out an extensive program of day labour construction. The labour was hired in the locality of the project and the equipment was obtained by tender at an hourly rate from equip-



One of the largest and most spectacular rock cuts in the province, near Milford Bay (Huntsville District).

ment owners. The following Highways were involved: 69, 103, 118, 124, 518, 520, 525, and 532.

Maintenance

Lighter snowfalls throughout the district during the past winter resulted in a reduction in equipment rentals for the year and allowed equipment repairs and overhauls to be completed ahead of schedule.

In an effort to reduce costly maintenance of gravel and prime surfaces, 35,383 tons of bituminous mulch were laid compared with 25,300 tons in the previous year. This has resulted in a decrease of 19.1 miles of prime surface in the district. Although the amount of bituminous surface treatment was less than in previous years, assistance from the Materials and Research Section in calibration and field supervision has resulted in a better than average standard of surface treatment during the past year.

An extensive program of bridge inspection has been instituted and as a result of deterioration revealed, a special bridge maintenance gang has been formed to carry out inspections and make repairs where necessary. A suspected alkali-aggregate reaction condition is causing a serious maintenance problem in some structures and steps have been taken to control the suspected aggregate sources in the Orillia area.

A program of fire fighting training was introduced during the year to insure that all personnel in the district are capable of using fire fighting equipment effectively.

A new device for fastening highway signs to posts was tested in the Huntsville District during the past year and has proved most satisfactory.

Two sections of highway have been assumed in the past year:

(1) Highway 518, Kearney to Sand Lake, 9.8 miles,

(2) Highway 644, Pointe-au-Baril, 0.5 miles.

New buildings constructed at patrol locations consisted of a nine-bay garage and a standard salt shed.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
69	C.N.R.	Torrance*	....
69	C.N.R.	Bala*	....

* Changes in existing protection.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Tons Placed 1963–64
11	D.H.O. patrol yard, 4 mi. south of Orillia	1,052
11B	From Jct. of Hwys. 11B, 35 and 60, easterly to Hillside	15,552
12 T.C.	From east end South Orillia By-pass and Atherley Narrows bridge	290
60	Smoke Creek easterly to district boundary and Lands and Forest parking lots	12,000
118	From 5 mi. west of Bracebridge to Milford Bay	12,937
121	Head Lake bridge, approximately 1 mi. west of Haliburton	931
	Totals	42,762



Highways 35 and 60—Grading east of Huntsville (Huntsville District).

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
35	Dorset to Carnarvon (sections)	1.0	1.0	1,500
35	5.0 mi. east of Dwight	0.3	0.3	450
69	Gravenhurst to 5.0 mi. north	0.9	0.9	1,485
124	0.5 mi. to 3.0 mi. west of the Jct. of Hwy. 124 and Secondary Hwy. 510	2.5	2.5	4,125
124	Dunchurch to 1.3 mi. easterly	1.3	1.3	2,145
503	0.5 mi. to 2.7 mi. east of the Jct. of Hwy. 35 and Secondary Hwy. 503	2.2	2.2	3,630
518	Emsdale to Kearney (sections)	1.0	1.0	1,575
518	5.0 mi. to 10.0 mi. east of Hwy. 69	5.0	5.0	8,250
525	Gravenhurst to Gravenhurst Sanatorium	1.5	1.5	2,475
532	Rosseau to Patterson's Corners	6.0	6.0	9,000
532	7.7 mi. to 8.2 mi. north of Bracebridge	0.5	0.5	750
	TOTALS	22.2	22.2	35,385

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
111	Jct. Hwy. 109 to Dyno Mines	3.2	8,000	240.0
124	5.0 mi. east of McKellar to 2.0 mi. west of the Jct. of Hwy. 124 and Secondary Hwy. 510	14.0	35,000	1,050.0
501	Hwy. 103 to Honey Harbour	8.9	22,250	667.5
507	Gooderham to 3 mi. southerly	3.0	7,500	225.0
514	Hwy. 35 to Interlaken	10.0	25,000	750.0
518	Orrville to Hwy. 69	12.0	30,000	900.0
518	Sprucedale to Bear Lake	7.0	17,500	525.0
519	South Jct. of Hwy. 121 and Secondary Hwy. 519 to Haliburton	16.5	40,333	1,237.5
520	Dunchurch to Ardbeg	16.5	41,250	1,308.1
520	Magnetawan to Jct. of Hwy. 124	1.9	4,750	142.5
530	Jct. of Secondary Hwy. 519 to 6.0 mi. west	6.0	15,000	450.0
532	Shadow River to Whitefish Lake	1.5	3,750	112.5
	TOTALS	100.5	250,333	7,608.1

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
35	Dorset to Carnarvon (sections)	2.5	6,710	340
111	Jct. of Hwy. 109 and Hwy. 111 to Dyno Mines	3.2	8,580	430
124	McKellar to 4.5 mi. east of McKellar	4.5	12,100	610
500	Kinmount to Irondale	0.8	2,150	105
501	Hwy. 103 to Honey Harbour	8.9	22,900	1,200
503	3 mi. east of Norland to 5 mi. east of Norland	2.0	5,400	270
519	South Jct. of Hwy. 121 to Haliburton	3.2	8,600	430
532	5.7 mi. north of Bracebridge to 7.0 mi. north of Bracebridge	1.3	3,490	175
559	North Jct. of Hwy. 69 and Secondary Hwy. 559 to 4.0 mi. south	4.0	9,702	571
	Totals	30.4	79,632	4,131

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
35, 60	Boyne River bridge No. 2	1963	1963	Reinforced concrete
35, 60	Boyne River bridge, No. 3	1963	1963	Reinforced concrete
35, 60	Cooper Lake Creek bridge	1963	1963	Reinforced concrete
121	Head Lake Narrows bridge	1963	1963	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	D.H.O. patrol yard, 4 mi. south of Orillia to old Hwy. 11	.....	544
11	Various locations, 5/8" crushed gravel "B", stockpiled	.....	4,990
11	Various locations, 5/8" crushed gravel "B", stockpiled	.....	4,992
11	D.H.O. yard forest home, 5/8" crushed gravel "B", stockpiled	.....	5,000
12 T.C.	From east end South Orillia By-pass 1.25 mi. and Atherley Narrows bridge	1.40	1,810
35, 60	Jct. of Hwy. 11B easterly to Hillside	7.39	81,763
35, 60	Jct. of Hwy. 11B easterly to Hillside	7.87	23,750
60, 35	Hillside easterly to Dwight including Boyne bridges No. 2 and No. 3	5.50	62,642
60	Smoke Creek easterly to district boundary and Lands and Forests parking lots	8.05	11,807
69	3.2 mi. west of Gravenhurst west limits	3.20	4,999
118	From 5 mi. west of Bracebridge west to Milford Bay	5.86	78,565
118	From 5 mi. west of Bracebridge west to Milford Bay	5.86	9,618
118	2.5 mi. east of Jct. of Hwys. 11 and 118	2.50	10,490
121	Head Lake bridge, approximately 1 mi. west of Haliburton	0.30	2,989
124	Dunchurch to 3 mi. east of Dunchurch	3.00	8,998
124	3 mi. east of Hwy. 69	3.00	8,300
124, 520	Various locations, 5/8" crushed gravel "B", stockpiled	.....	9,500
503	From Norland to 3 mi. east of Norland	3.00	6,962
518	9 mi. east of Hwy. 69	9.00	8,993
518	Various locations, 5/8" crushed gravel "B", stockpiled	.....	9,500
518	3.1 to 7.7 mi. east of Kearney, 5/8" crushed gravel "B", stockpiled	.....	11,500
519	Various locations, 5/8" crushed gravel "B", stockpiled	.....	9,991
520	Various locations, 5/8" crushed gravel "A", stockpiled	.....	8,000
530	Jct. of Hwys. 35 and 530 easterly to Maple Lake	6.00	30,990
532	Jct. Secondary Hwys. 516 and 532 to 3 mi. south of junction	3.00	5,954
532	Rosseau to Patterson's Corners, 5/8" crushed gravel "A", stockpiled	.....	9,980
Development Road			
680	Dillonport Road to Killbear Provincial Park gate	5.55	928
	Totals	80.48	433,555

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Jct. of Hwy. 93 to 4.0 mi. north of Burk's Falls	105.3	9,120
12 T.C.	Atherley Narrows to Midland	35.2	216
35	Jct. Hwy. 11B (Huntsville) to Haliburton to Victoria boundary	75.0	900
60	Jct. Hwys. 60 and 35 (Dwight) to Algonquin Park headquarters	28.4	38
69 T.C.	Jct. Hwy. 11 (Gravenhurst) to 1.5 mi. north of Pointe-au-Baril	84.9	480
103 T.C.	Jct. Hwy. 12 (Waubaushene) to Jct. Hwy. 69 (Footes Bay)	31.4	1,812
109	Jct. of Secondary Hwy. 500 to Cardiff Twp. line	12.4	68
111	Jct. of Secondary Hwy. 500 to Dyno Mines	7.6	16
118	Jct. Hwy. 69 (Glen Orchard) to Jct. Hwy. 35 (Dorset)	55.6	176
121	Kinmount to Tory Hill	42.0	260
124	Jct. Hwy. 69 to Secondary Hwy. 510 (Magnetawan)	39.2	6,100
400	Craighurst to Coldwater	12.4	12
500	Kinmount to Hwy. 111	51.1	212
501	Jct. Hwy. 103 to Honey Harbour	9.1	1,200
503	Kinmount to Norland	10.0	608
507	Gooderham to 5 mi. southerly	5.0	1,810
514	Hwys. 35 and 60 to Interlaken	10.0	1,620
516	Jct. Hwy. 11 to Windermere	15.7	224
518	Hwy. 69 to Sand Lake	55.8	7,300
519	Redstone Lake to Hwy. 121	33.6	1,100
520	Hwy. 11 at Burk's Falls to Ardbeg	33.7	2,060
525	Gravenhurst to Gravenhurst Sanatorium	1.7	300
527	Huntsville to Baysville	16.7	96
529	Jct. Hwy. 69 to Jct. Secondary Hwy. 529A	4.6	28
529A	Jct. Secondary Hwy. 529 to Bayfield Inlet	3.0	69
530	Carnarvon to Secondary Hwy. 519	12.0	666
532	Jct. Hwy. 69 to Jct. Hwy. 11	43.2	392
559	South Jct. Hwy. 69 to north Jct. Hwy. 69	13.5	52
592	Novar to Emsdale	9.8	48
612	Jct. Hwy. 103 to Jct. Hwy. 69	7.0	110
632	Jct. Hwy. 118 to Jct. Secondary Hwy. 532	18.2	88
644	Pointe-au-Baril to 0.5 mi. westerly	0.5	744
	TOTALS	883.6	37,925

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun
12 T.C.	From east end South Orillia By-pass easterly 1.25 mi. including Atherley Narrows bridge	1.40	1963
35, 60	Jct. Hwy. 11B easterly to Hillside	7.39	1962
60, 35	From Hillside easterly to Dwight including Boyne bridges Nos. 2 and 3	5.50	1963
69	Jct. Hwy. 69 and Moon River Road	0.30	1964
69	4.9 to 5.43 mi. west of Gravenhurst west limits	0.53	1963
69	From west limits of Gravenhurst to 1.05 mi. west	0.30	1963
118	From 5 mi. west of Bracebridge, west to Milford Bay	5.86	1962
118	Hwy. 118 from 2.4 to 3.6 mi. east of Hwy. 11	1.20	1963
121	Head Lake bridge, approximately 1 mi. west of Haliburton	0.30	1963
124	From 2.0 to 2.5 mi. west of Secondary Hwy. 520	0.50	1962
124	From Dunchurch to 0.75 mi. east	0.75	1962
124	From 4.1 to 4.8 mi. northeast of Hwy. 69	0.70	1963
124	From 0.57 to 1.07 mi. west of Hwy. 520	0.50	1963
124	0.2 to 0.4 mi. northeast of Magnetawan River ot Knoefli Falls	0.20	1964
124	Jct. of old and new highway east of Dunchurch	0.21	1963
501	Southeast of Honey Harbour	0.20	1963
503	0.5 to 2.5 mi. east of Hwy. 35	2.00	1962
507	Station 59 to 72, Lot 25, Concession 4, Glamorgan Twp.	0.26	1963
518	From 2.5 to 3.0 mi. west of Orrville	0.50	1962
520	From Jct. Hwy. 124 and Secondary Hwy. 520 to 12 mi. northwesterly	12.00	1963
520	Town of Burk's Falls from Hwy. 11 westerly 0.25 mi.	0.25	1963
525	From Hwy. 11B to sanatorium	1.28	1963

Grading and Culverts (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun
530	Jct. Hwys. 35 and 530, easterly to Maple Lake, 6 mi.	6.00	1963
532	7.7 to 8.2 mi. north of Bracebridge	0.50	1962
532	0.1 mi. north of south Jct. Hwys. 516 and 532	0.20	1963
532	5.4 mi. west of Rosseau	1.10	1964
532	From 0.25 mi. east of Rosseau River, easterly 0.50 mi.	0.50	1964
Development Road			
680	Dillonport Road to Killbear Provincial Park gate	5.55	1963
	TOTALS	55.98	

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
12 T.C.	From east end South Orillia By-pass 1.25 mi. and Atherley Narrows bridge	1.40	1963	.....	2,512
35	Seabreeze revision	.....	.....	.....	4,043
35, 60	Jct. Hwy. 11B, easterly to Hillside	7.39	1962	.....	275,930
35, 60	Jct. Hwy. 11B, easterly to Hillside	7.87	1963	.....	29,071
35, 60	Hillside easterly to Dwight, including Boyne River bridges Nos. 2 and 3	5.50	1963	.....	167,205
69	4.1 to 4.8 mi. northeast of Hwy. 69	.70	1962	0.7	4,887
69	2.5 to 3.0 mi. west of Orrville	.50	1962	0.5	13,325
118	From 5 mi. west of Bracebridge, west to Milford Bay	5.86	1962	5.86	167,835
118	Hwy. 11B to sanatorium	1.28	1962	1.28	36,210
121	Head Lake bridge, approximately 1 mi. west of Haliburton	0.30	1963	0.30	11,176
124	0.55 to 1.05 mi. north of Hwys. 35 and 60	.50	1963	0.50	9,117
124	2.0 to 2.5 mi. west of Secondary Hwy. 520	.50	1963	0.50	7,500
124	From Dunchurch to 0.75 mi. east	.75	1963	0.75	16,643
124	0.57 to 1.07 mi. west of Secondary Hwy. 520	.50	1963	0.50	17,955
124	0.2 to 0.4 mi. northeast of Magnetawan River at Knoefli Falls	.20	1963	0.20	13,676
124	Jct. of old and new highway east of Dunchurch	0.3	1963	0.3	49,376
501	Southeast of Honey Harbour	0.2	1963	0.2	4,190
503	0.5 to 2.5 mi. east of Hwy. 35	2.0	1961	2.0	44,199
507	Stations 59 to 72, Lot 25, Concession 4, Glamorgan Twp.	0.25	1963	0.25	3,269
514	0.55 to 1.05 mi. north of Hwys. 35 and 60	.50	1962	0.50	8,472
518	From 2.5 to 3.0 mi. west of Orrville	.50	1962	0.50	10,448
520	From Jct. Hwy. 124 and Secondary Hwy. 520 to 12 mi. northwesterly	12.00	1963	12.0	4,878
525	From Hwy. 11B to sanatorium	1.28	1963	1.28	16,890
530	Jct. Hwys. 35 and 530, easterly to Maple Lake, 6 mi.	6.00	1963	6.0	21,579
530	2.2 to 2.9 mi. east of Hwy. 35	.70	1963	0.70	24,237
532	7.7 to 8.2 mi. north of Bracebridge	.50	1962	0.50	6,708
532	5.4 mi. west of Rosseau	1.1	1962	1.1	34,331
Development Road					
680	Dillonport Road to Killbear Provincial Park gate	5.55	1963	.....	46,936
	TOTALS	63.63		36.42	1,052,598

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11	Orillia: Nine-bay metal patrol garage constructed by D.H.O.	Equipment storage	1962	1963
516	Patterson's Corners: standard salt storage building	Equipment storage	1963	1964

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted (257 gals.)	10	.....	.....
Calcium dust layer on gravel roads	.....	400	130
Development roads built	14	.....	15.5
Off-road parks maintained	12	.....	.....
Roads snowploughed and kept open, King's Highways	12	.....	601
Roads snowploughed and kept open, Secondary Highways	18	.....	314.3
Roadside picnic places maintained	48	.....	.....
Routine maintenance, King's Highways	.....	.....	601
Routine maintenance, Secondary Highways	.....	.....	314.3
Salt for de-icing roads (raw)	.....	9,210	
Salt in sand, stockpiled	.....	2,400	
Sand for winter maintenance	.....	93,185	
Scale houses maintained	3		
Seeding by department's forces (sq. yds.)	1,091,420	.....	.....
Shrubs received and planted this year	6,000		
Signs erected or replaced	3,890		
Snow fence erected, dismantled, stored	.....		71
Traffic lights installed this year	1		
Weed control (gals.)	1,305	.....	795.1
Zone painting on King's Highways	13,499	.....	502
Zone painting on Secondary Highways (gals.)	4,024	.....	191

DISTRICT No. 13—NORTH BAY

G. MARTENS, P.Eng., District Engineer

Construction

Five major construction works were in progress in the year 1963. Two grading contracts at Point Alexander westerly, and Verner southerly, on Highways 17 and 64 respectively were completed this year, leaving a carry-over of one grading contract on Highway 17 from Rutherglen westerly, and the completion of the two grading and paving contracts on Highway 11B from North Bay southerly. The latter two projects presented numerous co-ordination problems, but with the full co-operation of all concerned, progressed satisfactorily, and the paving was completed just prior to winter shut-down.

Highway 64 from Verner southerly received a prime and double surface treatment, instead of asphalt pavement, after the completion of the grading. It will be interesting to study and compare the durability of this type of surfacing with asphalt pavement.

As in previous years, an extensive day labour programme was carried out during the fall and winter. This work consisted of pre-contract clearing, granular lifts and curve revisions.

Maintenance

Highway mileage in North Bay District was increased by the addition of 35 miles of Tertiary Road 805.

A two-way radio system was installed in the district, and has improved communications considerably.

Summer and winter maintenance operations were routine. Spring break-up was normal with little excessive frost damage to the highways.

Bitumen prime dust layer was applied to 63 miles of secondary highways, and mulch surface was constructed on 14 miles of gravel roads.

Six miles of hot-mix patching was carried out on Highway 17 between Mattawa and Rolphton.

The "Deslicker" was used to burn excess asphalt from the pavement for approximately three miles of the North Bay By-pass.

Traffic lights were installed at the Petawawa Military Camp on Highway 17.

D.H.O. Forces constructed one concrete bridge, six salt sheds and three temporary patrol offices.

Considerable cleaning of the right-of-way was carried out under the winter unemployment relief programme.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11B	North Bay south limits, southerly	4.76	1963	4.76	28,805
17 T.C.	Access road, Atomic Energy, Chalk River*	0.18	1962	0.18	757
17 T.C.	Bissetts Creek*	1.68	1961	1.68	2,059
63	Little Jocko, northeasterly	9.34	1963	9.34	13,002
64	Verner, Veuve River bridge	.....	1963	.....	126
	TOTALS	15.96		15.96	44,749

* Top course only.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
11	North Bay: patrol yard*			846
63	2.5 mi. north of Little Jocko, northerly	2.0	2.0	3,600
522	2.3 mi. west of Trout Creek, westerly	2.5	2.5	4,500
522	Vicinity of Arnstein	0.2	0.2	360
522	7.0 mi. west of Trout Creek	0.7	0.7	1,260
533	8.0 mi. north of Mattawa, northerly	5.0	5.0	9,000
535	3.0 mi. south of St. Charles, southerly	2.0	2.0	3,600
630	7.0 mi. south of Hwy. 17, southerly	2.0	2.0	3,600
	TOTALS	14.4	14.4	26,766

* Stockpiled.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
64	Verner to 0.5 mi. south of Lavigne	8.76	51,071	1,126.2
64, 535	Town of Noelville	1.50	4,500	157.5
64	Town of Alban	1.00	3,000	105.0
64	Field to Hwy. 11, various locations	10.00	30,000	1,050.0
64	Monetville to Noelville	10.50	31,500	1,102.5
522	Commanda, easterly	6.00	18,000	630.0
524	Farley's Corners to Jct. Hwy. 534	3.00	9,000	315.0
534	Powassan to Restoule	19.00	57,000	1,995.0
535	West Arm Narrows, various locations	2.00	6,000	210.0
539	Field to River Valley	10.00	30,000	1,050.0
	TOTALS	71.76	240,071	7,741.2

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
17	T.C. Mattawa, easterly (patching only)	48	7,542.03

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
64	Verner to 0.5 mi. south of Lavigne	8.76	62,528	2,730.59

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
539	Deer (Frood) Creek, north of Warren. Length: 76 feet; Width: 30 feet; Clearance unlimited; 5 spans: three at 16 feet, two at 13 feet 3 inches	1963	1963	Laminated timber trestle

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	North Bay patrol yard (stockpile)	.....	5,000
11B	North Bay south limits, southerly	4.76	67,814
17	Point Alexander, northwesterly	9.55	122,154
17	Rutherglen westerly to Hwy. 531	4.10	38,498
17	Bissetts Creek	1.68	490
17	Mattawa, easterly	48.00	1,526
17	Access road, Atomic Energy, Chalk River	0.18	172
17	Sturgeon Falls patrol yard (stockpile)	.....	4,989
63	Little Jocko, northerly	9.34	41,430
63	Little Jocko (stockpile and road)	.....	13,914
64	Lavigne	.50	29,491
64	10 mi. south of Lavigne (stockpile)	.....	9,984
522, 524 528,	Jct. Hwys. 522, 524 and Commanda (stockpiles)	.....	13,997
528A	Noelville patrol yard	.....	8,294
533	Hwy. 63, southerly (stockpiles)	.....	12,996
534	Restoule, easterly (stockpiles)	.....	10,000
535	6 mi. north of Noelville, northerly (stockpiles)	.....	14,054
630	Hwy. 17, southerly (stockpiles)	.....	10,000
	TOTALS	78.00	404,803

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11, 11B	4 mi. north of Burks Falls to Latchford	138.1	2,750
17, 17B T.C.	Pembroke to Hagar	176.8	11,584
63	North Bay to Temiskaming	40.3	1,011
64	Rutter to Jct. Hwy. 11	86.6	21,540
94	Challander to Jct. Hwy. 17	5.9	30
123	Hwy. 11 to airport	3.8	175
124, 510	Hwy. 11 to Magnetawan	14.6	1,359
522, 524 528,	Trout Creek to Loring	41.3	4,080
528A	Hwy. 64 to Wolseley Bay	11.6	1,700
531	Hwy. 17 to Bonfield	2.4	.....
533	Mattawa to Jct. Hwy. 63	34.8	1,671
534	Powassan to Restoule	22.1	11,193
535	Veuve River to Noelville	31.1	4,779
539, 539A 607,	Warren to Field	27.2	4,542
607A	French River to Jct. Hwy. 64	7.8	300
630	Hwy. 17 to Kiosk	18.5	369
635	Hwy. 17 to Quebec border	1.6	.....
	TOTALS	664.5	67,083

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
11B	North Bay south limits, southerly	4.76	1963	4.76
17 T.C.	Point Alexander (west of Deep River), northwesterly	9.55	1962	9.55
17 T.C.	Rutherglen to Jct. Hwy. 531	4.10	1963	.....
64	Lavigne to Verner	7.91	1962	.50
64	Field, northerly	1.00	1964	.85
124	Magnetawan	.60	1963	.60

Grading and Culverts (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
522	5 mi. west of Trout Creek, westerly	2.50	1964	2.20
533	7 mi. south of Hwy. 63, southerly	.50	1964	.50
534	1 mi. west of Nipissing, westerly	1.00	1963	1.00
535	Noelville, northerly	.88	1964	.88
539	8 mi. north of Warren	1.00	1964	.80
630	Kiosk, northerly	1.50	1964	1.50
	TOTALS	35.30		23.14

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11B	North Bay south limits, southerly	4.76	1963	4.76	165,623
17 T.C.	Point Alexander (west of Deep River), northwesterly	9.55	1962	9.55	539,628
17 T.C.	Rutherglen, westerly to Hwy. 531	4.10	1963	.....	65,330
64	Verner to 0.5 mi. south of Lavigne	7.91	1962	.50	39,820
124	Magnetawan	.60	1963	.60	37,418
522	5 mi. west of Trout Creek, westerly	2.50	1964	2.20	69,633
533	7 mi. south of Hwy. 63, southerly	.50	1964	.50	35,199
534	1 mi. west of Nipissing	1.00	1963	1.00	44,829
539	8 mi. north of Warren, northerly	1.00	1963	.80	40,587
630	Kiosk, northerly	1.50	1964	1.50	45,000
535	Noelville, northerly	.88	1964	.88	11,433
	TOTALS	34.30		22.29	1,094,500

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
63	Little Jocko, northeasterly	9.34	1963	9.34	38,154
64	Field, northerly	1.00	1964	.85	64,869
	TOTALS	10.34		10.19	103,023

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11	Trout Creek	Radio equipment	1963	1963
11	Powassan	Salt storage	1962	1963
11	Powassan	Patrol office	1963	1963
11	Powassan	Equipment storage	1963	1963
11	North Bay	Radio equipment	1963	1963
11	Marten River	Equipment storage	1963	1963
11	Marten River	Salt storage	1963	1963
11	Temagami	Radio equipment	1963	1963
17 T.C.	Point Alexander	Radio equipment	1963	1963
17 T.C.	Klocks	Radio equipment	1963	1963
17 T.C.	Mattawa	Salt storage	1962	1963
17 T.C.	West of Jct. Hwy. 94	Salt storage	1963	1963
17 T.C.	Verner	Radio equipment	1963	1963
17 T.C.	Verner	Patrol office,	1963	1963
17 T.C.	Verner	Salt storage	1962	1963
64	Lavigne	Salt storage	1963	1963
64	Noelville	Patrol office	1963	1963
535	St. Charles	Salt storage	1963	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		638	292
Off-road parks maintained	14		
Roads snowploughed and kept open, King's Highways	9		464.5
Roads snowploughed and kept open, Secondary Highways	15		200.0
Roadside picnic places maintained	13		
Routine maintenance, King's Highways			464.5
Routine maintenance, Secondary Highways			200.0
Salt for de-icing roads (raw)		8,868.47	
Salt in sand, stockpiled		1,439.56	
Sand for winter maintenance		68,212.00	
Scale houses maintained	3		
Seeding by department's forces (acres)	98.97		
Signs erected or replaced	4,232		
Snow fence erected, dismantled, stored			10.0
Traffic lights installed this year	1		
Weed control			335
Zone painting on King's Highways (gals.)	9,406		451.1
Zone painting on Secondary Highways (gals.)	131		5.5

DISTRICT No. 14—NEW LISKEARD

R. S. CHAPMAN, P.Eng., District Engineer

Construction

Better-than-average construction weather enabled us to complete some 40 miles of paving.

The grading, granular base and structure contracts for the portion of the Tri-Town By-pass from Secondary Highway 558 northerly to the point where it joined the existing Highway 11 north of New Liskeard including the structures over Highway 65 and the Wabi River were completed.

Traffic now crosses the Ontario Northland Railway on a level crossing. Included in this contract was Stage I of a future overhead. Approach fills were to be built to approximately 10 feet below profile grade but, due to embankment failure, approach fills were only approximately 65 per cent completed. The settlement of the fill is being supervised by the Foundation Section by special instrumentation.

Grading on Secondary Highway 558 from Haileybury westerly to the Tri-Town By-pass was completed by early summer.

The contract for the paving of the Tri-Town By-pass included the paving of that portion of Secondary Highway 558 which had been regraded, plus grading, drainage, granular base and paving of Highway 65 from the Tri-Town By-pass into New Liskeard. This contract was completed and opened to traffic on September 18 which enabled through traffic by by-pass Cobalt, Haileybury and New Liskeard.

The top lift of pavement was placed on the portion of Highway 11 between Englehart and the South Wye. The grading and base course of pavement were completed in 1962.

On Highway 65 east a grading, drainage and granular base contract from the Quebec boundary westerly, approximately seven miles, was halted by winter. It will be completed by July 1, 1964.

By mid-summer the grading was completed on the final contract for Highway 66 east. The paving contract, from approximately one mile west of Larder Lake to the Quebec border, was completed in early autumn. This now completes the reconstruction of Highway 66 between Highway 11 and the Quebec boundary.

On Highway 101, approximately five miles east of Matheson, a new structure of reinforced concrete and structural steel with approaches was placed over the Painkiller Creek. Approximately 30 miles east of Matheson, at the Ghost River, a reinforced concrete deck was placed over the structural steel, completing this contract for structure and approaches which was begun in the 1962 construction season.

Maintenance

Spring break-up of 1962 was about average with difficulties being confined primarily to some of the gravel highways. Frost boils and frost heaves were also a problem on scattered sections of various paved highways. The winter of 1963–64 was unusually moderate but heavy intermittent falls of snow in February and

TRI-TOWN BY-PASS
LATCHFORD
TO NORTH BAY
COBALT
NEW LISKEARD
TO COCHRANE
HAILEYBURY
JUDGE
QUEBEC
Lake Timiskaming
Montreal River
Wabi River
Blanche River
11
65
558
1
SCALE
0
2 MI.
4 MI.
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO.



Paving and structure between Englehart and South Wye (New Liskeard District).

March resulted in a deep accumulation and also a heavy consumption of coarse salt and salt-sand mixture.

Summer maintenance was routine in nature with the following items being worthy of special note: Some 175 miles of gravel highways were treated with liquid calcium for dust control, 504 miles of weed and brush spray was carried out and 500 miles of highways were zone painted. Bridge repairs for the year were routine.

Special projects and items of particular interest were as follows: A total of 31.8 miles of mulch paving was put down, 28.6 miles on King's and secondary highways, several granular and ditching projects were carried out, four intersections illuminated, one new timber bridge constructed and 152 acres of seeding on capital contracts was completed.

Also of interest was a test to compare the effectiveness for snow and ice removal purposes of salt as a salt-calcium mixture. Two test sections on Highway 11 were used for the experiment but the results in general proved inconclusive.

During the year three new patrol garages (Tri-Town, Sesekinika and Porquis Junction) were occupied and put into service by their respective patrols. Also 14 miles of additional highways were incorporated into the district road system. This mileage is composed of the paved 12-mile Tri-Town By-pass (Highway 11) and the two miles of gravel road running from Secondary Highway 571 to the Earlton Airport (Secondary Highway 640). A total of 78 building permits were approved and issued.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights	Bell
11	O.N.R.	New Liskeard, New Tri-Town By-pass	X	

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11	Englehart to South Wye	11.64	1962	5.74	27,800
66	Quebec boundary, westerly	11.99	1963	11.99	23,800
11, 65, 558	Tri-Town By-pass and Haileybury West Road	16.78	1963	16.78	34,000
624	Hwy. 66, southerly 1 mi.	1.00	1963	1.00	1,250
	TOTALS	41.41		35.51	86,850

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
65W	From 13 mi. to 16.2 mi. west of New Liskeard	3.2	3.2	4,800
65E	From 2 mi. to 3.1 mi. east of New Liskeard	1.1	1.1	1,650
	From 4.85 to 5.85 mi. east of New Liskeard	.....	.....	.....
101E	From 28 mi. east to 41.4 mi. east of Matheson	13.4	13.4	21,000
562	From Jct. Hwys. 571, 562 to Jct. Hwys. 65, 562	5.3	5.3	7,950
567	From Hwy. 11 easterly for 0.7 mi.	0.7	0.7	934
569	From Hwy. 624 easterly for 6.0 mi.	6.0	6.0	9,081
	TOTALS	29.7	27.7	45,415

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
65W	From 4.0 mi. west to 8.3 mi. west of New Liskeard	4.3	13,560	502
65E	From 3.0 mi. east to 5.2 mi. east of Hwy. 11, double treatment	4.4	14,650	620 (⅝B)*
66W	From 5.5 mi. west to 11.0 mi. west of Hwy. 11	5.5	16,275	680
66W	From Jct. Hwys. 65, 66, various sections for 12 mi.	5.5	16,500	770 (⅝B)*
	Township James (Elk Lake) Streets, 0.4 mi.	0.4	1,100	60
	TOTALS	20.1	62,085	2,632

* Crushed gravel.

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Hwy. 65 interchange, Hwy. 11 over Hwy. 65, Tri-Town By-pass	1962	1963	Reinforced concrete or prestressed beams
11	Wabi River bridge, approximately 0.5 mi. northwest of New Liskeard (Tri-Town By-pass)	1962	1963	Structural steel and re inforced concrete
101	Ghost River, approximately 16 mi. west of Quebec border	1962	1963	Structural steel and re inforced concrete
101	Painkiller bridge (Nickle Creek) 3.9 mi. east of north limits of Matheson	1963	1963	Structural steel and re inforced concrete
101	Opishing River bridge, approximately 32 mi. west of Timmins	1962	1963	Steel stringers on tim ber cribs

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Englehart to South Wye	11.64	37,900
11	Tri-Town By-pass	5.77	88,000
65	Quebec boundary, west	5.40	27,000
65	10 to 16 mi. west of New Liskeard	6.00	10,500
66	Quebec boundary, westerly	5.73	54,000
66	Quebec boundary, westerly	11.99	14,000
101	30 to 34 mi. east of Matheson	4.00	6,000
101	Painkiller Creek bridge	0.53	7,400
101	Quebec boundary, westerly	0.64	4,400
558	Haileybury, west	3.95	33,600
560	Shiningtree to Westree	20.00	10,000
560	Elk Lake to Gowganda	27.00	10,000
564	Jct. Hwy. 112 to 7 mi. westerly	7.00	7,500
567	Jct. Hwy. 11 to Silver Centre	20.00	12,000
569	0.75 mi. south of Hilliardton (stockpile)	.....	8,000
576	Jct. Hwys. 576 and 101	.....	8,000
610	Jct. Hwy. 101 to Connaught	10.00	8,000
624	Hwy. 11 to 12 mi. northerly	12.00	12,000
569, 660	Secondary Hwy. 569 and Development Road 660	.....	15,500
	TOTALS	151.65	737,800

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Latchford to Porquis Junction	120	125
11B	South Junction By-pass to North Junction By-pass	12	80
65	Quebec boundary to Matachewan	80	1,899
65E	3.8 mi. east of Jct. Hwys. 11 and 65 to 5.9 mi. east	3.8	3,278
66	Jct. Hwys. 65 and 66 to Quebec boundary	60	426
101	Quebec boundary to Shawmere River	150	5,080
101E	28 mi. east of Jct. Hwys. 11 and 101 to 41 mi. east	13.4	21,000
558	4 mi. west of Haileybury to Montreal River	12	702
560	Englehart to Gogama	145	3,203
562	Jct. Hwys. 11 and 562 to Jct. Hwys. 65 and 562	9	1,600
562	Jct. Hwys. 562 and 571 to Jct. Hwys. 562 and 65	5	7,950
564	Jct. Hwys. 11 and 564 to Boston Creek	10	3,597
566	Hwy. 65 to Ashley Mine	15	1,968
567	Hwy. 11 to Loon Lake	21	795
567	Hwy. 11 to 0.70 Mulch	0.7	934
569	Jct. Hwys. 11 and 569 to Jct. Hwys. 624 and 569	17	3,380
569	Jct. Hwys. 624 and 569 to 6 mi.	6	9,081
570	Jct. Hwys. 11 and 570 to Sesekinika	2.6	2,034
577	Jct. Hwys. 101 and 577 to Ansonville	15	1,066
610	Jct. Hwys. 610 and 101 to Jct. Hwys. 610 and 67	12	102
624	Jct. Hwys. 11 and 624 to Jct. Hwys. 624 and 66	27	2,337
	TOTALS	736.5	70,637

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
New 11	Tri-Town By-Pass, Secondary Hwy. 558 to Jct. of Hwy. 11 north of New Liskeard, 5.77 mi.	5.77	1962	1.77
66	From Quebec boundary, westerly 5.73 mi.	5.73	1962	2.33
65	From Quebec boundary westerly 0.7 mi. and from 2.2 mi. west of Quebec boundary, westerly 4.5 mi.	5.40	1963	3.24
558	Haileybury west limits, westerly 3.95 mi.	3.95	1962	2.35
	TOTALS	20.85		9.69

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11, 65, 558	Tri-Town By-pass	16.78	1963	16.78	324,600
11	Wabi River bridge	.....	1962	.....	700
11, 65, 558	Tri-Town By-pass	16.78	1963	16.78	44,900
65	Quebec boundary westerly	5.40	1963	2.70	140,600
66	Quebec boundary westerly	5.73	1962	2.33	108,700
101	Painkiller Creek	.53	1963	.53	43,600
101	Ghost River bridge	0.64	1962	0.64	35,100
558	Haileybury west limits, westerly	3.95	1962	2.35	79,700
	TOTALS	49.81		42.11	777,900

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
101	Foleyet, easterly	13	1963	13	74,800
101	35 to 41 mi. east of Matheson	6	1963	6	4,800
66	15 to 22 mi. west of Hwy. 11	7	1963	7	10,400
624	14 to 20 mi. south of Hwy. 66	6	1963	6	21,700
569	From south Jct. Hwy. 11, northerly 6 mi.	6	1963	6	21,500
570	Hwy. 11, easterly 2 mi.	2	1963	2	8,100
560	11 mi. to 12 mi. west of Elk Lake	1	1963	1	10,000
558	8 to 12 mi. west of Haileybury	4	1963	4	15,300
567	1 to 7 mi. south of North Cobalt	6	1963	6	4,800
	TOTALS	51		51	171,400

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
558	Tri-Town: Five-bay and office section	Patrol garage	1962	1963
558	Tri-Town	Bulk salt storage	1963	1963
11	Sesekinika: Five-bay and office section	Patrol garage	1962	1963
101	Foleyet: Four-bay garage and office section	Patrol garage	1961	1963
101	Foleyet	Storage building	1960	Compl. except for floor
610	Porquis Junction: Six-bay and office section, used jointly by patrols of New Liskeard and Cochrane Districts	Patrol garage	1962	1963
560	Gowganda	Equipment storage	1962	Compl. less ceiling
560	Gowganda: Building has office, washroom and stock crib	Equipment storage	1963	1963
560	Shiningtree	Bag salt storage	1963	1963
560	Gogama	Equipment storage	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		768	
Development roads built			1
Off-road parks maintained	10		
Roads snowploughed and kept open, King's Highways			489
Roads snowploughed and kept open, Secondary Highways			351
Roadside picnic places maintained	13		
Routine maintenance, King's Highways			489
Routine maintenance, Secondary Highways			356
Salt for de-icing roads (raw)		7,681	
Salt in sand, stockpiled		1,396	
Sand for winter maintenance		29,941	
Seeding by department's forces (acres)	155		
Signs erected or replaced	2,007		
Snow fence erected, dismantled, stored			94
Weed control			504
Zone painting on King's Highways			440
Zone painting on Secondary Highways			60

DISTRICT No. 16—COCHRANE

J. D. FOSTER, P.Eng., District Engineer

Construction

The grading, granular base, and structure contract on Highway 11 from Val Albert easterly 5.46 miles commenced in early July and was completed by November.

The granular base course on approximately half the contract was treated with sodium chloride as an aid to compaction and dust control in order to compare the relative merits of sodium chloride to those of calcium chloride used on the other half of the contract. Due to the late completion date of the contract, it will be early summer before a realistic appraisal of the two materials can be made.

The Mattawishkwia River bridge at Hearst on Secondary Highway 583 was completed and opened to traffic in early August.

Paving was carried out on Highway 11, Porquis Junction northerly 9.3 miles and Highway 67 from Porquis Junction to Ansonville. Included in the paving contract were the grading and paving of the Porquis patrol yard and 2.8 miles of resurfacing on Highway 11 from Cochrane to Smooth Rock Falls.

The paving contract on Highway 11, north of Porquis Junction, contained approximately six miles of asbestos impregnated asphalt containing various percentages of asbestos.

A contract for grading, drainage, granular base and hot-mix paving for 5.29 miles in Ansonville, Iroquois Falls and Montrock was let in the spring. Due to excellent fall weather, the base course pavement was completed before the winter shutdown, leaving only the top course pavement and miscellaneous items to be completed the following year.

Four clearing contracts were awarded late in the year on three proposed new highways.

The clearing contract from Hornepayne southerly 15 miles on Secondary Highway 631 was begun in December and was near completion by the end of the fiscal year.

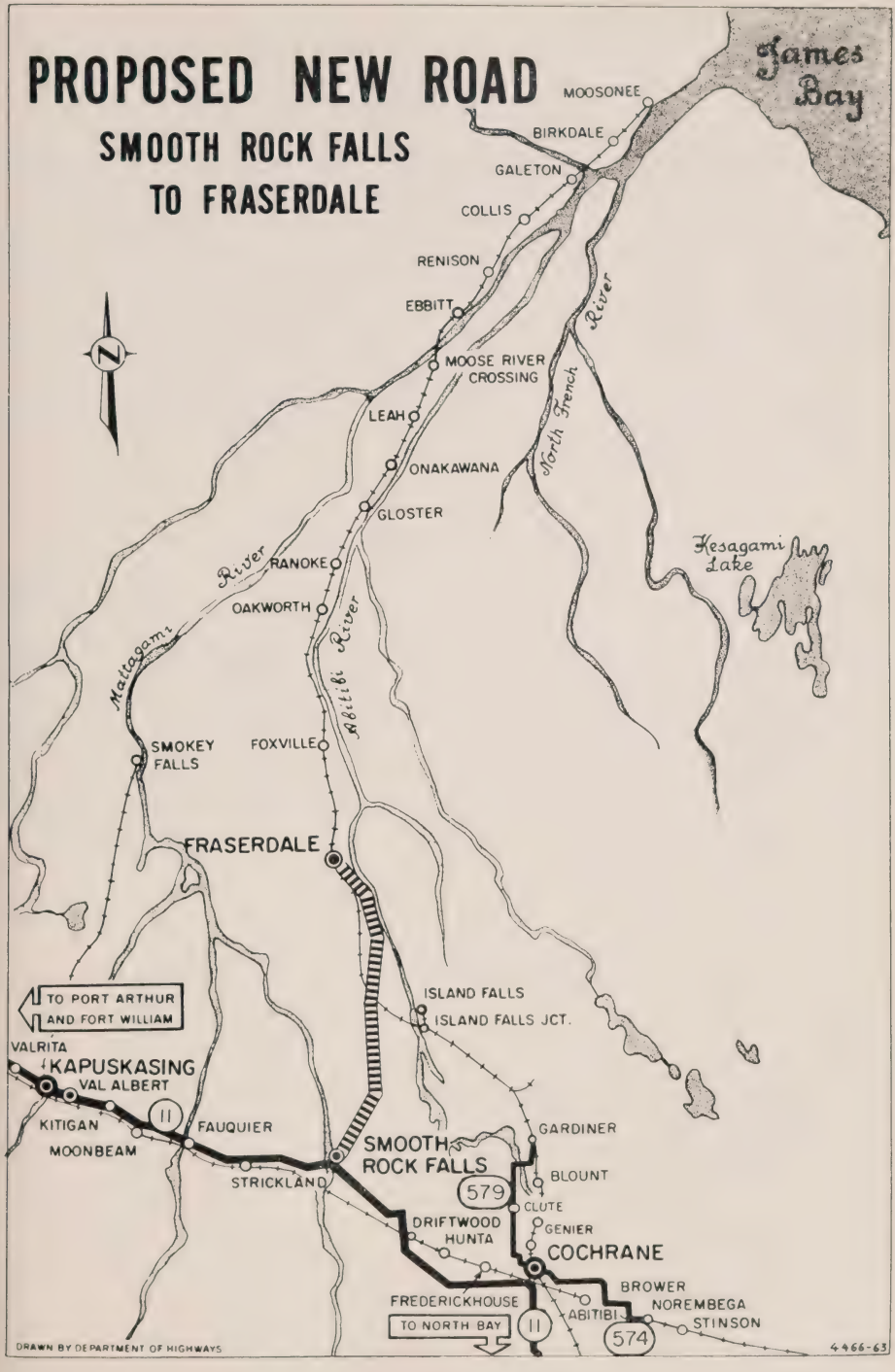
Two clearing contracts from Pinard southerly 16 miles on Secondary Highway 653 and a clearing contract from 8.0 miles east of Cochrane easterly 11 miles on Secondary Highway 652 were let in February but, due to the excessive depth of snow, operations could not be commenced prior to the end of the year.

Maintenance

Winter arrived early and unusually heavy snowfall throughout the entire district was encountered, resulting in the frequent use of snow-clearing equipment and chemicals.

A new hydraulic sander was added to our fleet and improved our winter maintenance effort.

A new six-bay patrol garage was constructed and put into use at Porquis Junction and a start was made on a new district paint shop. A new salt shed was


PROPOSED NEW ROAD
SMOOTH ROCK FALLS
TO FRASERDALE
James Bay
MOOSONEE
BIRKDALE
GALETON
COLLIS
RENISON
EBBITT
MOOSE RIVER CROSSING
LEAH
ONAKAWANA
GLOSTER
RANOKE
OAKWORTH
SMOKEY FALLS
FOXVILLE
FRASERDALE
Mattagami River
Abitibi River
North French River
Kesagami Lake
TO PORT ARTHUR AND FORT WILLIAM
VALRITA
KAPUSKASING
VAL ALBERT
KITIGAN
MOONBEAM
FAUQUIER
STRICKLAND
ISLAND FALLS
ISLAND FALLS JCT.
GARDINER
SMOOTH ROCK FALLS
BLOUNT
579
CLUTE
GENIER
DRIFTWOOD
HUNTA
COCHRANE
BROWER
NOREMBEGA
STINSON
ABITIBI
574
FREDERICKHOUSE
TO NORTH BAY
11
DRAWN BY DEPARTMENT OF HIGHWAYS
4466-63

constructed at Kapuskasing in connection with the development of a new patrol yard.

An extensive winter works program was carried out with right-of-way clearing and grading on various secondary roads and an extensive shouldering operation was carried out on Highway 11, Pagwa River westerly.

Routine summer operations were carried out throughout with extensive brush and weed spraying and a continued program of soil stabilization was carried out with favourable results.

Several old native timber bridges were replaced with pipe arch and treated timber culverts, using D.H.O. forces.

Our communication system was greatly improved with the installation of a two-way radio system.

Maintenance costs are being shared under an industrial road agreement linking Secondary Highway 625 at Caramat with Secondary Highway 614 at Manitouwadge, a distance of 60 miles.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
67, 578	Through Ansonville, Iroquois Falls and Montrock	August	5.30	5,694
67	West limit of Ansonville to 0.546 mi. easterly	August	0.55	823
11	Porquis Junction, northerly 9.3 mi.	July	9.30	6,938
67	Porquis Junction to south limits of town of Ansonville	August	5.17	7,880
	Patrol yard at Porquis Junction	August	.....	1,005
583	Mattawishkwia River at Hearst south limits to 0.218 mi. south	August	0.22	620
11	20 to 21.08 mi. south of Cochrane	August	1.08	7,418
	TOTALS		21.62	30,378

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
583	Hearst to Lac Ste. Therese	7.33	21,000	700
636	Intersection Hwys. 11 and 636 north to concessions 4 and 5, Clute	3.00	9,000	300
574	East limits of town of Cochrane, easterly 1 mi.	1.00	3,000	100
	TOTALS	11.33	33,000	1,100

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
11	Cochrane to Smooth Rock Falls, various locations	0.814	5,556

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Bass Creek bridge, 1.0 mi. east of Val Albert. Concrete on laminated creosote timber pile bents. 2 spans at 13 feet, 3 inches; 4 spans at 16 feet. Overall length 90 feet, 6 inches. Roadway 28 feet. No sidewalks	1963	1963	Creo. timber
583	Mattawishkwia River bridge at Hearst. Built on a 4 degree curve and superelevated concrete deck on steel substructure, 3 span at 75 feet, overall length 225 feet abutment to abutment. Roadway 28 feet. One sidewalk	1962	1963	Superst'ure
583	15 mi. bridge on Coppell Road. Concrete deck on steel beams and creosote timber abutments, 1 span at 60 feet abutment to abutment. Roadway 30 feet. No sidewalks	1962	1962	Superst'ure
583	Jessie River bridge, 9 mi. south on Coppell Road. Paved laminated timber deck on steel beams and timber piles, 2 spans at 23 feet 4 inches; 1 span at 58 feet. Overall length 104 feet, 8 inches. Roadway width 26 feet. One sidewalk	1962	1962	Creo. timber

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Val Albert, easterly 5.4 mi.	5.46	73,606
67, 578	Through Ansonville, Iroquois Falls and Montrock	5.85	34,059
583	Mattawishkwia River bridge	0.22	147
578	Herman Lake to Montrock	3.00	2,931
578	Stockpiled 4 mi. east of Hwys. 11 and 578		9,997
579	Cochrane to Gardiner	20.70	10,000
583	Hearst to Meade	22.85	14,995
574	Cochrane to Norembega	18.20	10,004
625	Jct. Hwys. 11 and 625 to Caramat	4.00	20,410
631	Jct. Hwys. 11 and 631 to Hornepayne	7.00	16,543
	TOTALS	87.28	192,692

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Cochrane to Porquis Junction	28.93	1,036
11	Smooth Rock Falls to Kapuskasing	37.18	300
11	Hearst to Longlac	134.90	59
67	Iroquois Falls to Hwy. 11	6.60	120
11B	Old Hwy. 11 through Hanna Twp.	6.20	1,227
11B	Old Hwy. 11 through Hunta	9.50	124
Secondary Highways:			
574	Cochrane to Norembega	18.00	1,867
578	Herman Lake to Montrock	6.00	2,654
579	Cochrane to Gardiner	18.00	3,922
583	Lake Ste. Therese to Mead	40.18	6,799
625	Jct. Hwys. 11 and 625 to Caramat	20.00	6,103
631	Jct. Hwys. 11 and 631 to Hornepayne	46.00	3,770
636	Jct. Hwys. 11 and 636 to Frederickhouse	3.00	2,354
	TOTALS	374.49	30,435

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
11	Val Albert, easterly 5.4 mi.	5.46	1963	5.46
67, 578	Ansonville, Iroquois Falls and Montrock	5.30	1963	5.30
	TOTALS	10.76		10.76

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11	Val Albert, easterly 5.4 mi.	5.46	1963	5.46	68,111
67, 578	Ansonville, Iroquois Falls and Montrock	5.30	1963	5.30	31,154
	TOTALS	10.76		10.76	99,265

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
574	Cochrane to Norembega	7	1963	7	11,144
578	Herman Lake to Montrock	3	1963	3	2,931
579	Cochrane to Gardiner	6	1963	6	17,810
583	Mead to Hearst to Lac Ste. Therese	2	1963	2	12,022
625	Jct. Hwys. 11 and 625 to Caramat	4	1963	4	20,410
631	Jct. Hwys. 11 and 631 to Hornepayne	7	1963	7	16,543
636	Jct. Hwys. 11 and 636 to Frederickhouse	1	1964	1	8,263
	TOTALS	30		30	89,123

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
67	Porquis Junction: Six-bay metal garage	Patrol equip. storage	1962	1963
11 T.C.	Kapuskasing, new patrol site: Standard frame salt shed, walls to be asphalt sprayed; asphalt floor laid and electricity installed	Salt storage	1963	1963
11 T.C.	Opasatika: Frame storage building for rubber-wheeled tractor loader	Tractor loader garage	1963	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,297	.....
Calcium for de-icing roads	.....	4	.....
Roads snowploughed and kept open, King's Highways	3	.....	320.50
Roads snowploughed and kept open, Secondary Highways	8	.....	148.21
Routine maintenance, King's Highways	.....	.....	320.50
Routine maintenance, Secondary Highways	.....	.....	148.21
Salt for de icing roads (raw)	.....	4,007	320.50
Salt in sand, stockpiled	.....	631	.....
Sand for winter maintenance	.....	10,434	.....
Scale houses maintained	5	.....	.....
Seeding by department's forces (acres)	199	.....	.....
Shrubs received and planted this year	359	.....	.....
Signs erected or replaced	1,420	.....	.....
Snow fence erected, dismantled, stored	.....	.....	10.00
Weed control (gals.)	495	.....	129.00
Zone painting on King's Highways (gals.)	1,878	.....	228.20
Zone painting on Secondary Highways (gals.)	35	.....	3.00

DISTRICT No. 17—SUDBURY

T. A. SHARPE, P.Eng., District Engineer

Construction

Major construction contracts underway include heavy grading on Highway 68 from Birch Island Village to LaCloche Channel (4.25 miles), equipment rental for grading on Secondary Highway 639 from Jimchrist Lake to Secondary Highway 546 (7.59 miles), and heavy grading from Windy Lake to Cartier (8.21 miles). These contracts are in the early stages of construction.

Several contracts were finalled during the year including paving of 13.0 miles of Secondary Highway 545 from Capreol northerly to Moose Mountain Mine gates and resurfacing from the Sudbury old city limits to Murray Mine on Secondary Highway 544. Also, heavy grading on Highway 68 from Whitefish Falls southerly to Birch Island (5.07 miles), including a structure, equipment rental for grading on Secondary Highway 639 from Algom-Quirke Mine to Jimchrist Lake (7 miles), grading and granular base on Secondary Highway 545 from Capreol northerly to Moose Mountain Mine gates and the Spanish River bridge at Webbwood, including approaches on Development Road 563.

In addition to these contracts, several day labour and winter work projects for clearing, grading and gravelling were completed.

Two additional contracts for sewers, watermains, grading and granular base are currently underway within the limits of the city of Sudbury, one on Highway 17 from the old city limits to Barrydowne Road and the other on Bancroft Drive from Highway 17 to Minnow Lake.

Maintenance

Normal maintenance operations continued throughout the district.

The two-way radio system was completed, and the expected increase in efficiency of operations was realized.

Five additional hydraulic sanders were in use this year, resulting in a better standard for winter operations.

The program of shoulder stabilization was continued this year in the vicinity of Estaire on Highway 69 south.

Traffic signals were installed in Sudbury at the intersection of Highway 69 north and LaSalle Boulevard and also at the intersection of Highway 17 west and Power Street in Copper Cliff.

Shoulder and drainage improvements were extensively carried out on Secondary Highways 634 and 540.

Under the winter works program one 100-foot Bailey bridge was installed on Secondary Highway 544, one timber structure was constructed at Providence Bay on Secondary Highway 551, and the Rat Lake Narrows bridge was replaced by a multi-plate structure on Secondary Highway 549. Twelve small timber structures were repaired throughout the district. Other extensive winter works projects included brushing on Highways 69 south and 637; granular lifts and



Spanish River Bridge at Massey on Development Road No. 563 (Sudbury District).

realignment through much rock on Secondary Highways 637, 533 and 537, and developing picnic sites.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Overpass Built	Flash Lights Bell
68	C.P.R.	McGregor Bay. Whitefish River Indian Reserve No. 4	...	1
68	C.P.R.	Curtin Twp. overhead at Whitefish Falls	1	...
	Totals		1	1

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
69 T.C.	Various locations from Sudbury to Britt	0.25	1963	0.25	633.65
545	Capreol, northerly to Moose Mountain Mine gates	13.15	1963	13.15	17,790.42
545	Vicinity of Falconbridge radar station	0.72	1963	0.72	805.78
	Totals	14.12		14.12	19,229.85

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
68	10.7 mi. south of Little Current to South Baymouth	32.0	99,315	2,186.9
526	Hwy. 69 to Britt	2.3	6,801	206.1
529	Hwy. 69 to Hwy. 529A	12.2	21,055	729.3
540	Jct. Hwys. 542 and 540, westerly	11.5	42,863	939.3
540	Johnston's Corner to Gore Bay	1.2	3,403	90.0
549	Hwy. 17 to Lake Penage	9.0	28,744	749.4
551	Mindemoya to West Bay	7.0	18,748	601.7
	Totals	75.2	220,929	5,502.7

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
17, 69, 541	Vicinity of Sudbury, various locations	2.25	2,396.23
544	Old Sudbury, western city limits to new limits	2.67	4,249.75
544	Intersection at Azilda	0.16	782.26
	TOTALS	5.08	7,428.24

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
540	Gore Bay, easterly	32.21	75,677	3,153.75
551	Jct. Hwys. 540 and 551	2.00	5,000	150
	TOTALS	34.21	80,677	3,303.75

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
68	C.P.R. overhead in village of Whitefish Falls. Length: 173 feet; Width: 28 feet; 1 span of 73 feet; Clearance unlimited	1963	1963	Reinforced concrete
69 T.C.	Naiscoot River bridge, 3.7 mi. north of Pointe-au-Baril station. Length: 122 feet; Width: 40 feet; 1 span of 122 feet; Clearance unlimited	1963	1963	Structural steel and reinforced concrete
544	Bannerman's Creek near Benny. Length: 100 feet; Width: 10 feet 9 inches; 1 span of 90 feet; Clearance unlimited	1963	1963	Triple-single Bailey
551	Mindemoya Creek at Providence Bay. Length: 49 feet 6 inches; Width: 24 feet; 1 span of 40 feet; Clearance unlimited	1963	1964	Timber and structural steel



Bridge construction at Naiscoot River on Highway 69, showing temporary Bailey bridge (Sudbury District).

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
68	Whitefish Falls, southerly to Birch Island	5.07	53,177
68	Birch Island to LaCloche Channel	4.25	9,284
69 T.C.	Naiscoot River bridge	0.05	259
536	0.8 mi. north of Jct. Hwys. 17 and 536	.....	5,997
540	Moore's Corners (stockpiles)	.....	10,656
543	Long Lake Road (stockpiles)	.....	5,997
545	From Capreol northerly to Moose Mountain Mine gates	13.15	11,492
	TOTALS	22.52	96,865

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
17 T.C.	Hagar to Blind River	147	16,728
Old 17	Whitefish to Nairn	15	333
68	Hwy. 17 to South Baymouth	80.9	19,626
69	Capreol to Pointe-au-Baril	98.9	15,684
108	Hwy. 17 to Quirke Lake	27	1,426
537	Hwy. 69 to Wanapitei	13	6,786
538	Algoma Mills, easterly to Hwy. 17	4	.....
540	Little Current to Meldrum Bay	89	23,504
541	Hwy. 17 to Wanapitei Lake	17	627
542	Tehkummah to Jct. Secondary Hwy. 540	48	7,820
543	Hwy. 69 to Long Lake	5	.....
544	Sudbury to Geneva Lake Mine	61	9,068
545	Bailey's Corners to Hanmer and Capreol to Milnet	18	227
549	Hwy. 17 to Lake Penage	9	2,189
551	West Bay to Mindemoya and Secondary Hwy. 542 to Providence Bay	11	1,266
553	Massey, northerly	43	298
555	Secondary Hwy. 557 to Lake of the Mountains	5	541
557	Blind River to Lake Matinenda	14	435
634	Secondary Hwy. 544 to Val Caron	12	1,464
637	Hwy. 69 T.C. to Killarney	40	19,330
	TOTALS	757.8	127,352

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
17	Old Sudbury city limits, easterly to Barry Downe Road	1.58	1964	0.20
68	Whitefish Falls, southerly	5.07	1962	3.14
68	Birch Island to LaCloche Channel	4.25	1964	1.00
544	2 mi. west of Secondary Hwy. 544A to Cartier	8.21	1964	0.10
639	Algom-Quirke Mine to Jimchrist Lake	6.83	1962	0.55
639	Jimchrist Lake to Secondary Hwy. 546	7.59	1963	1.25
	TOTALS	33.53		6.24

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
68	Whitefish Falls, southerly	5.07	1962	3.14	135,484
544	Part "C" intersection at Azilda	0.17	1963	0.17	3,108
639	Algom-Quirke Mine to Jimchrist Lake	6.83	1963	0.55	75,000
	TOTALS	12.07		3.86	213,592

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
540	7 mi. west of Little Current to 15 mi. west of Little Current	8.00	1963	8.00	10,383
542	Tehkummah to Mindemoya	5.00	1962	1.00	625
544	Sudbury old western city limits to new city limits	2.67	1963	2.67	36,321
	TOTALS	15.67		11.67	47,329

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17	D.H.O. yard, McKerrow	Patrol office	1963	1964
69	D.H.O. yard, Hanmer	Salt and equipment storage	1963	1963
17	D.H.O. yard, Wanapitei	Equipment storage and patrol headquarters	1962	1963
69	D.H.O. yard, Paddy Lake	Salt and equipment storage	1963	1963
69	D.H.O. yard, Paddy Lake	Patrol office	1963	1964
69	D.H.O. yard, Hanmer	Patrol office	1963	1964
541	D.H.O. yard, Garson	Salt and equipment storage	1963	1963
541	D.H.O. yard, Garson	Equipment storage and patrol headquarters	1963	1964
544	D.H.O. yard, Chelmsford	Equipment storage and patrol headquarters	1964	1964

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,542.17	364
Off-road parks maintained	16		
Roads snowploughed and kept open, King's Highways	.....	.....	329.19
Roads snowploughed and kept open, Secondary Highways	.....	.....	454.37
Roadside picnic places maintained	13		
Routine maintenance, King's Highways			329.19
Routine maintenance, Secondary Highways	....	.....	498
Salt for de-icing roads (raw)	.....	10,317.35	
Salt in sand, stockpiled		1,682.65	
Sand for winter maintenance	....	50,533.65	
Scale houses maintained	1	.....	
Seeding by department's forces (acres)	42	.....	.....
Shrubs received and planted this year	558	.....	.....
Signs erected or replaced	6,175		
Snow fence erected, dismantled, stored	.....	.....	70.5
Trees planted this year	1,000		
Traffic lights installed this year	2		
Weed control (gals.)	335	.....	204
Zone painting on King's Highways (gals.)	5,979		272
Zone painting on Secondary Highways (gals.)	2,735	.....	122

DISTRICT No. 18—SAULT STE. MARIE

A. A. WARD, P.Eng., District Engineer

Construction

Hot-mix paving top completed on Highway 17 from Havilland Bay to Chippewa Falls.

Grading, drainage, granular base and hot-mix paving was completed on Highway 17 from Chippewa Falls westerly to Secondary Highway 563, a distance of 9.17 miles. The Carp River bridge was also completed.

The grading, drainage and granular base was completed on Highway 101 from Wawa easterly towards Hawk Junction for 7.92 miles. Work was started on grading, drainage and granular base from 7.92 miles east of Wawa, easterly 3.36 miles to the junction of Secondary Highway 547 and northerly on Highway 547, 3.63 miles to Hawk Junction. A start was also made on the Hawk Creek and McVeigh Creek bridges.

In addition, clearing on Highway 101 was continued on from the junction at Secondary Highway 547, southerly 7.6 miles.

Work was started on grading, drainage and granular base from Big Pine Lake westerly 10.5 miles.

In addition, right-of-way clearing was continued westerly on Highway 101 from 38 miles west of Highway 129 for 11.1 miles.

Grading, drainage and granular base was completed on the forest access road from Missinabie south for 7.69 miles.

Gravelling was completed on the forest access road from Dalton north for 7.12 miles.

Maintenance

Some 11.5 miles of Highway 17 T.C.H. were taken over from Fort William District, westerly from Marathon.

Following completion of construction contracts on the Hawk Road northeast of Wawa, the district took over maintenance of Highway 101 and Secondary Highway 547 to Hawk Junction.

A continuing reduction of water level in the St. Joseph Channel necessitated adjustments to the ramps serving the ferry "St. Joseph Islander" which runs between St. Joseph Island and the mainland. This work was started in the fall of 1963 and will be completed before heavy summer traffic starts in 1964.

Routine maintenance was carried out: priming, hot-mix pavement patches, bridge repairs, gravelling, winter work and the usual winter maintenance.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Flash. Lights Bell
129	C.P.R.	North of Thessalon	2
556	A.C.R.	Heyden	2
627	C.P.R.	Heron Bay	2
	Totals		6

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
17 T.C.	Havilland Bay to Chippewa Falls*	9.40	1962	9.40	9,002.46
17B	By-passed portion of old Hwy. 17 at Harmony Beach	0.90	1962	0.90	1,448.78
17 T.C.	Chippewa Falls to 1.14 mi. west of Secondary Hwy. 563†	9.15	1963	9.15	15,743.54
17 T.C.	"A" weigh scale 6.5 mi. north of Sault Ste. Marie		1963		589.33
556	"B" intersection of Hwys. 17 and 556, 9 mi. north of Sault Ste. Marie				
	TOTALS	19.45		19.45	26,784.12

* Second layer of HL4 placed through length of Contract.
† 1,031.72 additional tons of HL4 placed in Batchawana Patrol Yard.

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
548	Hilton Beach, St. Joseph Island, southerly	1.0	1.0	1,500
638	Echo Bay, easterly	1.5	1.5	2,250
	TOTALS	2.5	2.5	3,750

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
129	Chapleau, southerly	7	21,000	860
552	Jct. Hwy. 17, westerly	6	18,000	720
546	Jct. Hwy. 17, northerly	2	6,000	240
563	Patches over 3.5 mi.	2	6,000	240
	TOTALS	17	51,000	2,060

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1963–64	Tons Placed 1963–64
17 T.C.	Various locations from Bruce Mines to Bar River	22.55	3,647.95

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Cr. Gravel Used 1963–64
17 T.C.	Sections, Batchawana to Montreal River	5.0	15,000	750
129	Jct. Hwy. 17, northerly	8.0	24,000	1,200
129	6 to 9 mi. south of Chapleau	3.0	9,000	450
546	Iron Bridge, north	2.0	6,000	300
548	Hilton Beach, southerly	6.0	18,000	900
563	Jct. Hwy. 17 to end (sections)	1.0	3,000	150
	TOTALS	25.0	75,000	3,750

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Carp River bridge. Length: 162 feet; Width: 42 feet; Spans: 1	1963	1963	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
17 T.C.	Chippewa Falls to 1.14 mi. west of Secondary Hwy. 563	9.17	95,322.34
17 T.C.	Havilland Bay to Chippewa Falls	9.40	17,952.24
17B	By-passed portion of old Hwy. 17 at Harmony Beach	0.90	607.52
17 T.C.	Chippewa Falls to 1.14 mi. west of Secondary Hwy. 563	9.17	15,124.92
101, 547	7.9 mi. east of Wawa easterly 3.63 mi., and Secondary Hwy. 547 from Hwy. 101 northerly to Hawk Junction 3.30 mi.	3.33	4,160.00
101	From Wawa easterly 7.92 mi. (toward Hawk Junction)	7.92	60,956.50
129, 554	Various locations	.....	4,403.97
556	North end of Wabos, southerly	13.00	7,506.81
614	Manitouwadge, southerly	16.00	10,003.66
638	From Echo Bay, northerly (2,491.10 additional tons placed at Batchawana Patrol.)	17.00	6,800.00
	TOTALS	85.89	222,837.96

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
17	Blind River to Marathon	347	13,000
101	Chapleau, east and west	39	432
129	Thessalon to Chapleau	145	7,277
546	White River Road	50	820
548	St. Joseph Island	36	3,974
550	Gros Gap Road	11	1,230
552	Goulais Bay Road	5	280
554	Parkinson Road	11	50
556	Searchmont Road	23	1,914
561	Dunn's Valley Road	20	808
563	Batchawana Village Road	3	45
614	Manitouwadge Road	38	3,723
627	Heron Bay Road	5	132
638	Sylvan Valley Road	20	1,137
	TOTALS	753	34,822



Bridge construction at Wawa Lake on Highway 101 (Sault Ste. Marie District).

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1963-64
17 T.C.	Chippewa Falls to 1.14 mi. west of Secondary Hwy. 563	9.17	1962	1.90	7.27
101	From Wawa easterly 7.92 mi. toward Hawk Junction	7.92	1962	.60	7.32
101	From Big Pine Lake, westerly	10.45	1963		7.73
101, 547	7.9 mi. east of Wawa easterly, 3.63 mi. and Secondary Hwy. 547 from Hwy. 101 northerly to Hawk Junction, 3.30 mi.	6.93	1963		3.33
	From 7.2 mi. north of Dalton northerly to Missanabie (Forestry Road)	7.69	1963		7.69
	TOTALS	42.16		2.50	33.34

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963-64	Tons Placed 1963-64
101	From Wawa easterly 7.92 mi. toward Hawk Junction	7.92	1963	7.44	133,889
	From 7.2 mi. north of Dalton, northerly to Missanabie (Forestry Road)	7.69	1963	7.69	41,330
	TOTALS	15.61		15.13	175,219

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	Batchawana patrol yard	Standard salt shed	1963	1963
17 T.C.	Echo Bay patrol yard	Standard salt shed	1964	1964

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Bridges painted		2		
Calcium dust layer on gravel roads			305	
Off-road parks maintained		5		
Roads snowploughed and kept open, King's Highways				565.3
Roads snowploughed and kept open, Secondary Highways				242.2
Roadside picnic places maintained		26		
Routine maintenance, King's Highways				565.3
Routine maintenance, Secondary Highways				242.2
Salt for de-icing roads (raw)			7,900	
Salt in sand, stockpiled			2,200	
Sand for winter maintenance			70,000	
Scale houses maintained		1		
Seeding by department's forces	(sq. yds.)	179,080		
Signs erected or replaced		1,748		
Weed control	(gals.)	376		229
Zone painting on King's Highways				459.2
Zone painting on Secondary Highways				51.5

DISTRICT No. 19—FORT WILLIAM

V. A. SNELL, P.Eng., District Engineer

Construction

The past year was marked by unusually warm and dry weather, particularly late in the fall. Construction work was carried on with very little delay due to weather conditions.

We completed the paving and trimming of the access to the new International Bridge over the Pigeon River. Customs and immigration facilities were completed later in the summer and the new crossing was opened to traffic on November 1, 1963. The official opening ceremonies are to be held in 1964.

Grading and base course paving work was completed between Fort William and Kakabeka Falls, except for the C.N.R. overhead which could not be completed due to late delivery of the structural steel. Next year should see the completion of this section to Trans-Canada standards.

Grading was completed on the 11-mile section of Highway 17 from English River east, but the grade separation at the C.P.R. crossing at Sheba could not be completed due to late delivery of structural steel. Paving was not carried out due to the fact that the grading work was not finished until very late in the season.

West of Atikokan grading was completed on the section from 10 to 24.5 miles west. This 14.5-mile job included a very extensive section of rock work and was pushed to completion on schedule. This facilitated a late-summer award of the contract for the next 10 miles, which includes the structure over the Seine River. This will be the last section of this road to be supervised by the Fort William District. The contractor has made a very good start and has practically completed all his rock work during the winter months.

In the English River area it was observed that quite severe cracking of new pavement occurred during the winter of 1962–63. This condition was also very evident in older pavements in this area and apparently attributed, at least in part, to the nature and grading of the native materials. The local sand deposits are quite clean and tend to be very uniformly graded. To date, no effective remedy has been devised to prevent this cracking.

Increasing emphasis is now being placed on the Resources and Access Roads program in this area.

Maintenance

One mile of low-cost bituminous mulch was laid by department forces on the Caland Road, Secondary Highway 622. A total of 85,438 tons of granular base was placed on 19.5 miles of Secondary Highways 593 and 595.

Department crusher produced 56,230 tons during the summer and a total of 34,465 tons of maintenance crushed gravel was placed on highways throughout the district.

A three-bay metal garage, started last year at Upsala, was completed and turned over to the department. Three salt sheds were also erected at Rossport, Terrace Bay and Nakina.

Automatic signals were installed on Highway 590 at Kakabeka Falls.



Resources Road north of Pickle Lake—installation of culvert (Fort William District).

Because of the mild winter, with more snow, an additional 400 tons salt to a total of 4,600 tons were used with a corresponding increase in the use of sand.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
Secondary Highway			
590	C.N.R.	Village of Kakabeka Falls	2 flash. lights, 1 bell, 2 gates

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
61	New Pigeon River bridge, northerly (includes plaza area)	5.46	1961	1.39	6,840.65
11, 17	Fort William city limits, westerly	5.12	1962	0.10	746.33
11, 17	Jct. Hwy. 130, westerly 6.03 mi. (base course only excluding C.N.R. overhead)	6.03	1962	5.40	8,840.14
17 T.C.	Little Firesteel River, westerly (surface course)	11.53	1962	11.53	15,268.30
11, 17	11.2 mi. east of Port Arthur (McKenzie River bridge approaches)	2.10	1963	2.10	480.83
11, 17	Jct. Hwy. 130 westerly and 1.2 mi. easterly (base course only)	10.10	1963	5.00	6,508.13
	Development Roads 652 and 624 Mapleward Road (one course only)	7.50	1963	7.50	9,151.07
	TOTALS	47.84		33.02	47,835.45

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1963–64	Tons Placed 1963–64
Secondary Highway				
622	Caland Ore Mine Road, north of Atikokan	1.0	1.0	1,120

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
11A	From Jct. Hwys. 11 and 17, easterly	15.0	28,457	1,954
585	From Jct. Hwys. 11 and 17, Cameron Falls	15.0	24,309	1,554
587	From Jct. Hwys. 11 and 17, Silver Islet	20.3	63,522	4,017
588	Villages of Nolalu and Stanley	2.6	3,338	278
589	From Jct. Hwy. 11A, north to end	19.0	25,431	2,120
590	From 1.0 mi. south of Hwys. 11 and 17 to Jct. Hwy. 588	14.1	24,647	1,584
591	From Jct. Hwy. 589, westerly	5.0	6,784	604
595	From Jct. Hwy. 590 to Jct. Hwy. 588 including village of South Gillies	9.1	13,159	900
	TOTALS	100.1	190,647	13,011

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11, 17	Twp. of Neebing. C.P.R. overhead: Spans 2 x 48′9″, 2 x 49′4.5″ and 2 x 50′9″; road width 30′; 2 sidewalks 2′ each	1963	Oct. 1963	Steel beam, concrete slab
11, 17	Twp. of Paipoonge. Corbett Creek: Radius = 17′6″; road width 24′	1962	May 1963	Conc. barrel arch culvert
17 T.C.	6.3 mi. west of English River. C.P.R. overhead: Spans 2 x 51′0″ and 1 x 48′0″; road width 36′; 2 sidewalks 2′ each	1963	Oct. 1963	Steel beam concrete slab
Sec. 599	Elbow Creek, 38 mi. south of Savant Lake. Elbow Creek: Span 36′0″; road width 22′	1963	Sept. 1963	Steel beam timber crib

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	From 10 to 23.9 mi. west of Atikokan	13.9	132,501
11, 17	Fort William city limits, westerly	5.1	977
11, 17	Hwy. 130 westerly including C.N.R. overhead	6.0	91,275
11, 17	C.P.R. overhead 3.8 mi. west of Fort William	0.5	4,131
11, 17	6 mi. west of Hwy. 130 to Kakabeka Falls	3.7	65,329
11, 17	Jct. Hwy. 130, westerly	10.1	6,583
11, 17	10 mi. east of Port Arthur	0.1	2,217
17 T.C.	Little Firesteel River, westerly	11.5	20,785
17 T.C.	English River, easterly	10.4	110,080
17 T.C.	C.P.R. overhead 6.3 mi. west of English River	1.6	13,079
61	Pigeon River International Bridge, northerly	5.7	9,330
Secondary Highways			
588	Northern Lights Lake, easterly	12.0	18,355
599	Savant Lake to Valora	25.0	63,516
Development Roads			
624, 652	Mapleward Road	6.4	28,607
691	Edward Street, northerly, Twp. of McIntyre	0.8	8,700
	TOTALS	112.8	575,465



Paving on the Trans-Canada Highway (Highway 17) west of Upsala (Fort William District).

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Longlac to Hwy. 584 (shoulders)	19	10,768
11	Geraldton to Nipigon	102	976
11	Jct. Hwy. 17 to Atikokan	86	1,066
11, 17	Fort William to Shabaqua Corners	40	385
11, 17	Nipigon to Fort William	72	789
11A, 17A	Port Arthur to Jct. Hwys. 11 and 17	20	1,210
17 T.C.	Marathon to Nipigon	113	1,585
17 T.C.	Shabaqua to Ignace	115	1,821
61	Fort William to Pigeon River bridge	40	205
Secondary Highways			
580	From Jct. Hwy. 11 to Leitch Mine	5	178
584	Geraldton to Nakina	40	762
585	Jct. Hwys. 11 and 17 to Cameron Falls	12	216
587	Jct. Hwys. 11 and 17 to Silver Islet	25	1,136
588	Jct. Hwys. 11 and 17 to Round Lake	35	739
589	Jct. Hwys. 11A and 17A to Dog Lake	19	796
590	Jct. Hwy. 130 to Jct. Hwy. 588	25	195
591	Jct. Hwy. 589 to Trout Lake	5	81
593	Jct. Hwy. 588 to Arrow River	12	270
595	Jct. Hwy. 590 to Jct. Hwy. 597	24	4,708
597	Jct. Hwy. 608 to Jct. Hwy. 595	9	123
608	Jct. Hwy. 61 to Jct. Hwy. 595	12	6,456
	TOTALS	830	34,465

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
17 T.C.	English River, easterly 10.4 mi.	10.40	1962	7.90
17 T.C.	C.P.R. overhead 6.3 mi. west of English River, 1.55 mi.	1.55	1963	1.55
11, 17	Jct. Hwy. 130 for 6.03 mi. including C.N.R. overhead.	6.03	1962	4.53
11, 17	C.P.R. overhead 3.8 mi. west of Fort William, 0.46 mi.	0.46	1963	0.46
11, 17	6 mi. west of Hwy. 130 to Kakabeka Falls, 3.74 mi.	3.74	1963	3.74
11, 17	10 mi. east of Port Arthur, easterly 0.12 mi.	0.12	1963	0.12

Grading and Culverts (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64
11	10 mi. to 23.9 mi. west of Atikokan	13.90	1962	8.90
11	23.9 mi. to 34.0 mi. west of Atikokan	10.10	1963	4.80
624, 652	25th sideroad to Hwy. 17 and Mapleward Road to Hwy. 130	6.40	1963	6.40
691	Edward Street North, Twp. of McIntyre	0.81	1963	0.81
	TOTALS	53.51		39.21

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
17 T.C.	English River, easterly 10.40 mi.	10.40	1962	7.90	490,741
11, 17	Jct. Hwy. 130, westerly 6.03 mi.	6.03	1962	4.53	148,102
11	10.0 mi. to 23.9 mi. west of Atikokan	13.90	1962	13.50	338,663
11, 17	6 mi. west of Hwy. 130 to Kakabeka Falls.	3.74	1963	3.74	92,402
11	23.9 mi. to 34.0 mi. west of Atikokan	10.10	1963	0.40	11,893
691	Edward Street North, Twp. of McIntyre	0.81	1963	0.81	27,497
	TOTALS	44.98		30.88	1,109,298

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
593	Jct. Hwy. 588 south 10 mi.	10.0	1964	10	47,864
595	Jct. Hwy. 608 south 10 mi.	10.0	1964	9.5	37,574
560R	Hilldale Road, Twp. of McIntyre	4.5	1963	4.5	4,426
	TOTALS	24.5		24.0	89,864



Surveying most northerly road project in Ontario, north of Pickle Lake (Fort William District).

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17	T.C. Twp. of Upsala	Garage	1962	1963
17	T.C. 2 mi. east of Rossport	Salt shed	1963	1963
17	T.C. Twp. of Terrace Bay	Salt shed	1963	1963
Secondary Highway				
584	Crown Land, Twp. of Nakina	Salt shed	1962	1963

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted (232 gals.)	3	.....	.....
Calcium dust layer on gravel roads	.....	500	.....
Calcium for de-icing roads	.....	20	.....
Development roads built	.....	.....	10.9
Off-road parks maintained	21	.....	.....
Roads snowploughed and kept open, King's Highways	.....	.....	620
Roads snowploughed and kept open, Secondary Highways	.....	.....	486
Roadside picnic places maintained	20	.....	.....
Routine maintenance, King's Highways	.....	.....	597
Routine maintenance, Secondary Highways	.....	.....	486
Salt for de-icing roads (raw)	.....	4,600	.....
Salt in sand, stockpiled	.....	1,400	.....
Sand for winter maintenance	.....	20,440	.....
Scale houses maintained	2	.....	.....
Seeding by department's forces (acres)	197	.....	.....
Signs erected or replaced	2,961	.....	.....
Snow fence erected, dismantled, stored	.....	.....	20
Weed control	.....	.....	1,219
Zone painting on King's Highways (gals.)	6,277	.....	554
Zone painting on Secondary Highways (gals.)	426	.....	29

DISTRICT No. 20—KENORA

C. R. ROBERTSON, P.Eng., District Engineer

Construction

Rock grading work was completed on Trans-Canada Highway 17 from the junction of Highways 17 and 71 westerly for 5.73 miles. Upon completion of the grading a hot-mix paving contract was called over this section and completed.

A heavy rock grading contract on Trans-Canada Highway 17 from Keewatin westerly for 9.56 miles was started and should be completed next year in time to place hot-mix pavement on this section.

At Dryden on Trans-Canada Highway 17 the grading work on two contracts 10 miles east to eight miles west of town was completed and these sections covered with one lift of hot-mix asphalt. Sub-excavation, granular base, storm sewers, curb-and-gutter and hot-mix pavement remain to be done within the limits of the town of Dryden and should be completed early next year.

On Highway 11, at Pinewood, the Pinewood River bridge was completed.

To the east of Rainy Lake Causeway a grading and drainage contract including a structure at Windy Point Narrows was completed.

Work was started on a granular base and hot-mix paving contract from five miles east of Fort Frances easterly 13.74 miles.

Work continued on a rock grading contract from 10.4 miles east of Rainy Lake Causeway easterly for 12.43 miles including the C.N.R. overhead structure. This structure was completed with the exception of the structural steel painting. With the opening of this structure to traffic a temporary crossing at the railway tracks was eliminated.

Work was started on the Bear Passage bridge on Highway 11 located 16.0 miles east of Rainy Lake Causeway, and the erection of the structural steel was completed. The depth of water at Bears Passage—65 feet—necessitated piers at the shoreline and a central span of 360 feet. The two short end spans of 68 feet each were filled with concrete in sequence with the steel girders being cantilevered out from each pier. A barge with a crane had to be used to lift the steel girders into place as the ice could not support the weight of the crane. The central girders were 90 feet long and this length, coupled with the fast moving current plus the wind, made the placing of these girders a very complicated operation.

Farther east of the Causeway, on Highway 11, work was started on two grading contracts east and west of Mine Centre which places the whole section of Highway 11 from Rainy Lake Causeway easterly in Kenora District under construction.

On Highway 105 grading and granular base was completed on 30 miles of highway from the Trout Lake River bridge to 12 miles south of Ear Falls.

Maintenance

Highway mileage in the Kenora District was increased by the addition of 5.5 miles of Secondary Highway 647, 11.5 miles of Secondary Highway 642 and the extension of Highway 11 from Rainy Lake Landing easterly for approximately



T.C.H. (Highway 17) east of Longbow Corners (Kenora District).

20 miles to Bears Passage. The easterly limit of the district on Highway 17 was moved from English River to Ignace, reducing our mileage on Highway 17 by 38 miles.

Our asphalt plant completed paving on Highway 105 from Stone River to Ear Falls (34 miles) with three inches of hot-mix paving except for the southerly seven miles on which only 1.5 inch of base course was laid.

Day labour forces throughout the district completed grading, drainage and granular base work on approximately 25 miles of Highways 116, 601, 602, 604, 600, 617 and 72. The Lowe bridge on Highway 602 and Lath Mill bridge on Highway 600 were replaced with 8 feet and 12 feet structural plate culverts respectively. The Kramer Creek bridge on Highway 604 was replaced with a six-foot corrugated iron pipe culvert and the Hanninen bridge on Highway 611 was replaced with 72 inches by 44 inches corrugated iron pipe arch culvert. Major maintenance repairs were carried out on the Reed Narrows bridge, Highway 71, on Eagle River bridge, Highway 17, and the Chukuni River bridge, Highway 125, as well as maintenance painting on handrails and beams on various bridges throughout the district. Six miles of Highway 600, Highway 641 and Highway 596 from junction of 641 to Minaki, a total of 39 miles were primed, and 13 miles of Highway 621 from Highway 11 north, were surface treated.

A new weigh scale was constructed one mile east of Dryden on Highway 17 and salt sheds were erected at Crozier, Minaki, South Narrow Lake and Ely Lake patrol yards. A construction camp was set up at Mine Centre for the use of the construction staff.

Maintenance contracts for $\frac{5}{8}$-inch crushed gravel were let and completed for 65,000 tons throughout the district and 18,000 tons was crushed by day labour forces.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11	Rainy Lake causeway, easterly for 13.74 mi.*	13.74	1963	1.00	2,424
17 T.C.	Longbow Corners (Jct. Hwys. 17 and 71), westerly 5.73 mi.	5.73	1963	5.73	10,491
17 T.C.	Blackwater Creek 10.4 mi. east of Dryden, westerly 19.31 mi. including work in Dryden (2.9 mi.)	19.31	1963	16.41	29,313
105	Stone River southerly for 22 mi.	22.00	1963	22.00	71,464
	TOTALS	60.78		45.14	113,692

* Highway 11 — Rainy Lake causeway: Granular base approximately 80 per cent complete.

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Sand Used 1963–64
Secondary Highways				
596, 641	Keewatin (north limits), northwesterly to Minaki	33.00	108,200	2,405
600	Jct. Hwy. 11 at Rainy River, northerly to Jct. Secondary Hwy. 621	6.60	21,380	834
	TOTALS	39.60	129,580	3,239

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1963–64	Gals. Bit. Used 1963–64	Tons Chips Used 1963–64
621	Sleeman, Morson Road, from Jct. Hwy. 11 at Sleeman, northerly to Morson	13.00	31,253	1,374



Heavy grading between Atikokan and Fort Frances on Highway 11 (Kenora District).

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Wabigoon River bridge, approximately 3.2 mi. west of Dryden. Length: 146 feet; Width: 28 feet; Open single span: 80 feet	1962	1963	Steel truss, reinforced concrete deck
11	Pinewood River bridge 7.9 mi. west of Stratton. Length: 291 feet; Width: 28 feet; Open three spans: two of 81 feet, one of 97 feet	1962	1963	Steel and concrete reinforced conc. deck
11	C.N.R. overhead, approximately 13 mi. east of Rainy Lake causeway. Length: 110 feet; Width: 30 feet; Open single span: 80 feet	1963	1963	Steel and concrete reinforced conc. deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	10.4 mi. east of Rainy Lake causeway, easterly	12.43	29,426
11	Pinewood River bridge 7.9 mi. west of Stratton	.50	5,600
11	5 mi. east of Fort Frances, easterly	13.74	135,692
17 T.C.	6th Street, Keewatin, westerly 9.56 mi.	9.56	23,500
17 T.C.	10.4 mi. east of Dryden, westerly 19.31 mi. including 2.9 mi. in Dryden	19.31	30,510
17 T.C.	Longbow Corners, westerly 5.73 mi.	5.73	44,247
17 T.C.	Dryden, westerly to Oxdrift	7.36	120,441
17 T.C.	Dryden east limits, easterly 10.44 mi.	10.44	56,053
72	Jct. Hwy. 17, northerly 43.5 mi.	43.50	9,999
105	12 mi. south of Ear Falls, northerly 30.50 mi.	30.50	204,977
116	2 mi. west on Hwy. 116 from junction with Hwy. 72	2.00	13,009
Secondary Highways			
600	Jct. Hwy. 11 at Rainy River, northerly to Jct. Hwy. 621	26.20	14,999
602	West limits of Fort Frances to west boundary of Roddick Twp.	10.00	10,003
611	North and south from Jct. Hwys. 11 and 71	12.70	10,081
615	Jct. Hwy. 71, northerly 12.5 mi.	12.50	10,000
	TOTALS	216.47	718,537

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1963–64	Tons Placed 1963–64
11	Fort Frances to Rainy River	61.40	1,477.50
17 T.C.	Manitoba-Ontario boundary to west limits of Ignace	184.90	5,200.50
71	Longbow Corners, southerly to Jct. Hwy. 11	96.60	4,416.00
105	Jct. Hwy. 17 (Vermilion Bay), northerly to Red Lake	108.60	1,119.00
105	12 to 27 mi. south of Red Lake	15.00	43,601.00
119	Jct. Hwy. 17, northerly to Richan	13.01	273.00
128	North limits of Kenora, northerly to Redditt	18.60	1,378.50
Secondary Highways			
594	South limits of Dryden to Jct. Hwy. 17	22.60	542.00
596	Darlington Bay bridge, northwesterly to Minaki	32.40	162.00
598	Secondary Hwy. 604, westerly to Hwy. 128	2.80	462.00
600	Jct. Hwy. 71, westerly to Rainy River	59.00	3,132.00
601	Jct. Hwy. 17 (Dryden east limits), northerly (loop) to Hwy. 17	16.60	720.00
602	West limits of Fort Frances, westerly to Hwy. 11 at Emo	29.20	765.00
604	East limits of Kenora, northerly to Jct. Hwy. 128	16.50	477.00
605	Jct. Hwy. 17, northerly to end of road	7.55	216.00

Crushed Gravel and Stone on Roads by Department's Forces (Cont'd)

Hwy. No.	Location	Total Miles 1963-64	Tons Placed 1963-64
609	Jct. Hwy. 105, northwesterly to Clay Lake	10.10	97.50
611	Jct. Secondary Hwy. 602, northerly to end of road	12.70	1,105.50
613	Big Fork (Hwy. 602), northerly to Lake Despair	25.50	8,907.00
615	Jct. Hwy. 71, northeasterly to Burditt Lake	12.50	423.00
617	Jct. Hwy. 11 at Stratton, northerly to north branch	14.40	313.50
619	Jct. Hwy. 11 at Pinewood, northerly to Hwy. 621	25.50	2,472.00
621	Jct. Hwy. 11 at Sleeman, northerly to Lake of the Woods	33.40	732.00
641	Hwy. 17 west of Kenora, northerly to Jct. Secondary Road 596	9.80	391.60
	TOTALS	828.66	78,383.60

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963-64
11	10.40 mi. east of Rainy Lake causeway, easterly 12.43 mi.	12.43	1962	9.47
11	Rainy Lake causeway, easterly 10.39 mi. including Windy Narrows structure	10.39	1961	3.08
11	22.83 mi. east of Rainy Lake causeway, easterly 11.84 mi.	11.84	1963	4.03
11	34.0 mi. west of Atikokan, westerly 48.42 mi.	14.42	1963	4.61
17 T.C.	Dryden east limits, easterly 10.44 mi.	10.44	1961	1.61
17 T.C.	Longbow Corners (Jct. Hwys. 17 and 71), westerly 5.73 mi.	5.73	1961	1.60
17 T.C.	Dryden, westerly to Oxdrift and Wabigoon River bridge, 7.36 mi.	7.36	1962	1.78
17 T.C.	West end of Keewatin, westerly 9.56 mi.	9.56	1963	6.41
105	12 mi. south of Ear Falls, northerly 15.5 mi.	15.50	1963	14.88
	TOTALS	97.67		47.47

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963-64	Tons Placed 1963-64
11	10.40 mi. east of Rainy Lake causeway, easterly 12.43 mi.	12.43	1962	9.47	40,254
11	Rainy Lake causeway, easterly 10.39 mi. including structure at Windy Point Narrows	10.39	1961	3.08	37,104
11	22.83 mi. east of Rainy Lake causeway, easterly 11.84 mi.	11.84	1963	.....	4,517
11	34 mi. west of Atikokan, westerly 48.42 mi.	14.42	1963	.....	36,189
11	Pinewood River bridge 7.9 mi. west of Stratton	.50	1963	.50	32,715
17 T.C.	East limits of Dryden, easterly 10.44 mi.	10.44	1961	1.61	52,582
17 T.C.	Longbow Corners (Jct. Hwys. 71 and 17), westerly 5.73 mi.	5.73	1961	1.60	105,977
17 T.C.	Dryden, westerly to Oxdrift and Wabigoon River bridge, 7.36 mi.	7.36	1962	1.78	180,533
17 T.C.	Keewatin, westerly 9.56 mi.	9.56	1963	2.10	80,136
17 T.C.	Blackwater Creek 10.4 mi. east of Dryden, westerly 19.31 mi.	19.31	1963	2.90	21,646
105	3.5 mi. north of Ear Falls, northerly to Trout Lake River bridge	14.80	1963	14.80	646,996
105	12 mi. south of Ear Falls, northerly 15.5 mi.	15.50	1963	12.40	93,408
	TOTALS	132.28		50.24	1,332,057

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1963–64	Tons Placed 1963–64
11	19 mi. east of Fort Frances to Rainy River..	76.50	1963	76.50	107
17	West limits of Ignace to Ontario-Manitoba boundary	184.90	1963	184.90	8,495
71	Jct. Hwy. 11, northerly to Hwy. 17	96.60	1963	96.60	5,393
72	Jct. Hwy. 17, northerly 43.5 mi.	43.50	1963	43.50	4,922
105	Jct. Hwy. 17, northerly 108.90 mi.	109.80	1963	108.90	50,017
116	Patricia Corners to Hudson	10.00	1963	10.00	5,987
119	Hwy. 17, northerly to Richan	13.00	1963	13.00	1,068
125	Hwy. 105 to Cochenour Mine	8.50	1963	8.50	66
128	Jct. Hwy. 17, Main Street, northerly to Redditt	17.80	1963	17.80	588
Secondary Highways					
594	Dryden south limits to Jct. Hwy. 17	22.60	1963	22.60	2,037
596	Keewatin north limits, northwesterly to Minaki	32.40	1963	32.40	2,132
598	Hwy. 604, westerly to Hwy. 128	2.80	1963	2.80	132
600	Jct. Hwy. 71 to Rainy River	59.00	1963	59.00	17,063
601	Jct. Hwy. 17 east of Dryden (loop to Hwy. 17)	16.10	1963	16.10	2,505
602	Fort Frances to Jct. Hwy. 11 at Emo	30.80	1963	30.80	11,311
603	Hwy. 17, northerly to Dyment	3.10	1963	3.10	12
604	Kenora east limits, northwesterly to Hwy. 128	16.50	1963	16.50	555
605	Jct. Hwy. 17, north to end of road	7.50	1963	7.50	576
609	Jct. Hwy. 105, northerly to Clay Lake	10.10	1963	10.10	48
611	Jct. Hwy. 602, northerly to end of road	12.70	1963	12.70	7,371
613	Jct. Hwy. 602, northerly to Lake Despair.	25.50	1963	25.50	2,502
615	Jct. Hwy. 71, northerly to Burditt Lake	12.50	1963	12.50	4,526
617	Jct. Hwy. 11 (Stratton), north to Hwy. 600	14.40	1963	14.40	792
618	Hwy. 105 to Madsen	7.30	1963	7.30	42
619	Hwy. 11 (Pinewood), northerly to Hwy. 621	25.50	1963	25.50	1,920
621	Jct. Hwy. 11 (Sleeman), northerly to Lake of the Woods	32.90	1963	32.90	786
641	Hwy. 17 (west of Kenora), northerly to Hwy. 596	9.80	1963	9.80	804
642	Sioux Lookout to Alcona	11.50	1963	11.50	27
647	Jct. Hwy. 17 (west Vermilion Bay), northerly to Blue Lake	5.50	1963	5.50	9
	TOTALS	918.20		918.20	131,793



D.H.O. Asphalt Plant at Trout Lake River on Highway 105 (Kenora District).

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	Approximately 0.25 mi. west of Keewatin	Weight scale house	1962	1963
17 T.C.	East limits of Dryden	Weight scale house	1963	1963
11, 71	Jct. Hwys. 11 and 71 and Secondary Hwy. 611 at Crozier	Standard salt shed	1962	1963
596	Approximately 1 mi. southwest of Minaki	Standard salt shed	1963	1963
71	South Narrow Lake patrol yard	Standard salt shed	1963	1964
17	Ely Lake patrol yard	Standard salt shed	1963	1964

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,500	.....
Development roads built	.....	.....	7
Off-road parks maintained	19	.....	.....
Roads snowploughed and kept open, King's Highways	9	.....	566.10
Roads snowploughed and kept open, Secondary Highways	21	.....	369.60
Roadside picnic places maintained	10	.....	.....
Routine maintenance, King's Highways	.....	.....	566.10
Routine maintenance, Secondary Highways	.....	.....	369.60
Salt for de-icing roads (raw)	.....	1,847	.....
Salt in sand, stockpiled	.....	1,700	.....
Sand for winter maintenance	.....	23,051	.....
Scale houses maintained	6	.....	.....
Seeding by department's forces (acres)	670	.....	.....
Shrubs received and planted this year	75	.....	7.00
Signs erected or replaced	647	.....	.....
Snow fence erected, dismantled, stored	.....	.....	18.75
Traffic lights installed this year, T.C. Hwy. 17, Kenora	1	.....	.....
Weed control (gals.)	628	.....	482.50
Zone painting on King's Highways (gals.)	4,345	.....	321.50
Zone painting on Secondary Highways (gals.)	777	.....	54.50

PLANNING BRANCH

W. BIDELL, P.Eng., *Director of Planning*

Traffic and Planning Studies Section

W. Q. Macnee, P.Eng., Traffic and Planning Studies Engineer.

Planning Studies

The work of the Planning Studies subsection in the fiscal year of 1963-64 may be grouped into Area Studies, Urban Transportation Studies and Specific Studies. The work done in each of these groups is described as follows:

Area Studies

The purpose of an area study is to develop a concept of highways for a large area of the province. This procedure is designed to ensure a well balanced road system providing good continuity.

Area studies in process during this fiscal year are listed below:

(a) the Niagara Peninsula Planning Study: 80 per cent completed;

(b) the London Area Planning Study: 50 per cent completed;

(c) Toronto Area Highway Study (Western Section): Roadside interview origin-destination surveys were conducted and analytical work consisting of delineation of traffic zones and road inventory studies was completed. A start was made in the development of the "Gravity Model" in conjunction with the consultant working on the Burlington–Oakville Transportation Studies;

(d) Toronto Area Highway Study (Northern and Eastern Sections): Field work including roadside interview origin-destination surveys as well as 2,340 telephone interviews were conducted, the results coded and keypunched;

(e) Eastern Ontario Planning Study: This study which embraces the counties of Prescott, Russell, Stormont, Dundas and Glengarry as well as most of Carleton and Grenville commenced early in 1963. Field surveys including roadside interviewing origin-destination and a telephone interview survey of 3,500 households were completed. These data are now being analyzed and it is expected that the report will be completed early in 1965.

(f) Southwestern Ontario Planning Study: This study which includes the counties of Kent, Essex and Lambton was started toward the end of the fiscal year. Field surveys will be conducted during the summer of 1964.

(g) Barrie-Simcoe Planning Study: The recreational study of the area including Barrie and Simcoe County was planned with field data to be gathered during the summer of 1964. It is expected that this work will provide sufficient knowledge to solve the summer week-end recreational traffic problem, not only in this area, but also form a basis for a similar solution in other areas.

During this fiscal year, the complement of computer programs used to process the data for area planning was increased and emphasis placed on the modification of existing programs to provide more efficient operation and to streamline the entire processing system.

Urban Transportation Studies

Traffic studies of urban municipalities began in 1957 and continued throughout the year. To date 17 such studies have been completed and the following studies are currently in progress:

(a) Burlington and Oakville: Technical Co-ordinating Committee meetings were held during the year and as a result terms of reference and appraisals were developed for both studies. Work carried out by the consultant included home interview surveys, road and street inventory, traffic counting and development of generation and attraction factors for a gravity model analysis.

(b) Preston and Galt: Preliminary negotiations were concluded and a consultant hired by the municipalities to conduct this study.

(c) Brampton: Initial negotiations were concluded, terms of reference completed and a consultant hired by the municipality.

(d) Midland: Preliminary negotiations were entered into and terms of reference provided prior to the end of the fiscal year.

(e) Cornwall: This study is nearing completion and a final report anticipated by mid-summer of 1964.

(f) Smiths Falls: This study is nearing completion and a final report expected by fall of 1964.

(g) Brockville: This study is nearing completion with a final report anticipated by fall of 1964.

(h) Wallaceburg: Preliminary negotiations were entered into and it is expected that a consultant will be retained by the municipality for the study during the coming fiscal year.

(i) Welland: Preliminary negotiations were concluded and a firm of consultants retained by the municipality.

(j) St. Catharines: This study is nearing completion and a final report expected by November, 1964.

(k) Brantford: This study is virtually complete with the final report in draft form.

(l) Kingston: This study is virtually complete with the final report in draft form.

Specific Studies

During the fical year, a total of 97 specific studies were undertaken and completed. These studies included such diverse investigations as by-pass feasibility studies, bridge location studies, intersection studies, capacity analyses and truck climbing lane analyses.

Research Program

Because of the increasing importance of travel information in the planning and design of highways, the Traffic and Planning Studies Section proposed an investigation into new methods of obtaining necessary data. Previously, only roadside origin-destination interviewing had been utilized by the Department while other agencies had successfully included various types of in-home inter-

viewing. Three new methods were available: personal interview, telephone interview and postcard interview. A firm of consultants with experience in home interviewing was retained to design and conduct a survey in a restricted semi-rural area and all households were interviewed by one of the three available methods in order to determine travel patterns for a typical day.

This investigation has proven that all three methods are practical and has provided more trip data than roadside surveys in rural areas. On the basis of the experience gained in this research project, it was decided that the telephone interview technique should be used in two of the current area transportation studies.

Road Classifications

A total of 56 reports were prepared outlining such diverse topics as request for assumption by the province, roads serving conservation areas where public attractions are offered and potential traffic volumes on the projected Sudbury to Timmins Highway. A report outlining a policy in concept for secondary highways was also prepared.

Traffic Control

The Traffic Control Subsection continued and more or less completed the program to decentralize the routine traffic control studies to the regional level. A regional unit for the northern region was assigned to North Bay in September 1963. The bulk of the work for the north region is now handled by this unit.

In October 1963, a Traffic Control Analyst was assigned to the staff of the Assistant Planning Engineer, Northwest Region. All traffic control studies for this region are now carried out at the regional level.

With regionalization, the Head Office unit is now primarily responsible for developing policies, standards, procedures, etc., as well as providing help and guidance to regional personnel.

Central Region

The traffic control unit for this region began its second year of operation on a regionalized basis. Studies of some note included the investigation of the possibility of interconnected signal systems on Highway 10 at the Queen Elizabeth Way and on the 7th Line Oakville at the Queen Elizabeth Way. A very extensive study into the usefulness of weather information signs on the Burlington Bay Skyway is currently in progress. Considerable work was also carried out on the layout of the signing and other traffic control requirements for the new 12-lane portion of Highway 401 (Toronto By-pass).

The summary of the studies and field surveys carried out is as follows:

Intersection studies	120
Speed zoning studies	24
Traffic signal studies	18
Sign layouts	55
Illumination studies	49
Miscellaneous	161
Meetings (municipal and O.P.P. seminars)	35

In addition to this, the program of periodically reviewing the operation and timing of existing traffic signals was continued.

The Traffic Field Group carried out the following field survey projects:

Routine pattern counts	3,456
Special counts	227
Turning movements	191
Speed zoning (miles)	591
Miscellaneous	40

Eastern Region

The traffic control group for Eastern Region entered its second year of operation under the regional organization. With the completion of a substantial length of Highway 401, the group completed a considerable number of sign layouts and other traffic control studies necessitated by the opening of the new sections of this highway.

The summary of studies and meetings processed in the region for the past year is as follows:

Intersection studies	17
Speed zoning studies	13
Traffic signal studies	2
Sign layouts	17
Illumination studies	28
Miscellaneous studies	65
Meetings (municipal and O.P.P. seminars)	22

In addition to the above, alterations were made to some 67 existing sign layouts.

The Traffic Field Group completed the following field surveys:

Routine pattern counts	2,533
Special volume counts	365
Turning movements	47
Speed zoning (miles)	574
Miscellaneous	28

Northern Region

The traffic control unit for this region was moved from Head Office to the regional office at North Bay in August, 1963. The field staff which has been working out of North Bay since October 1962 was brought under the regional traffic control unit at the same time.

A summary of the studies carried out in the region during the past year is as follows:

Intersection studies	13
Speed zoning studies	23
Traffic signal studies	6
Sign layouts	18
Illumination studies	13
Miscellaneous	40
Meetings (municipal and O.P.P. seminars)	30

The Traffic Field Group completed the following field surveys:

Routine pattern counts	2,600
Special volume counts	200
Turning movements	84
Speed zoning (miles)	118

Characteristics

The Characteristics Group answered approximately 1,566 requests for information during the past year, consisting of the following:

Volume requests	650
Accident requests	808
Origin-destination requests	22
Speed study requests	86

During the year the Accident Group established section codes and began recording accident data on IBM cards.

In September the Department undertook a county road counting program by contract, covering all county roads in Southern Ontario. This program is to continue till September 1964 providing four good counts at every requested location representative of the four seasons of the year. These counts will be submitted to the Electronic Computing Centre for A.A.D.T.

The Data Processing Group commenced publishing monthly reports of volume data from the permanent count stations and then produced an annual report of permanent count stations 1963 containing pattern curves, lists of maximum days volumes, yearly growth, per cent change, etc. for each of 29 stations.

Permanent count stations — Jane and Bathurst on the Toronto By-pass section of Highway 401 were discontinued because of road construction and disruption of hydro lines.

Characteristics analysts completed reports on the Burlington Beach Strip-Skyway complex, and many planning studies requests of greatly expanded content.

Tentative A.A.D.T.'s were computer calculated midway through the year utilizing counts from July 1962 to June 1963, but were not published for general distribution.

Again the Annual Average Daily Traffic Volume Book and Traffic Accident Data was prepared, updated and published. The accident rates and the traffic volumes were calculated by the computer.

Highway Safety

In 1963 motorists drove an estimated 20 and a quarter billion vehicle miles on all highways, roads and streets in Ontario. The King's Highways, exclusive of Secondary Highways, carried some 46 per cent of the total miles travelled and accounted for 19.8 per cent of the 104,919 accidents reported in the province. The 1963 accident rate for all Ontario was 5.2, based on the number of reportable accidents for every million vehicle miles of travel. The rate for the King's Highway was 2.3 which is particularly encouraging when it is realized that Ontario in 1963 had a motor vehicle registration of 2,262,826, topped only by nine American states. The accident rate for the highways has decreased steadily from 3.2 in 1955 to the present rate.

Approximately two-and-three-quarter billion vehicle miles were recorded by motorists using 680 miles of the major network of controlled-access highways: the Queen Elizabeth Way, 400, 401, 402, 403 and 405, representing 14 per cent of all vehicle miles travelled in the province. Motor vehicle accidents on these highways accounted for 20 per cent of all accidents occurring on the highways and only four per cent of the 1963 provincial total. The accident rate for these highways was 1.6, the same as in 1962 despite a considerable increase in traffic volumes.

The 1963 death toll for all highways, roads and streets was 1,421, an increase of 2.7 per cent over the 1,383 total for 1962. Ontario's death toll represented 32.5 per cent of the 4,367 killed in Canada in 1963. Fatal accidents on the King's Highways, exclusive of Secondary Highways, totalled 577 in 1963 or 47.3 per cent of the provincial total. These accidents resulted in 691 deaths or 48.6 per cent of the Ontario total of 1,421. Despite the apparent high percentages, the fatal accident rate decreased for the highways from 9.2 in 1955 to a rate of 6.5 in 1963, while the fatality or death rate was 7.7 as compared to 11.0 for 1955. These rates represent the number of fatal accidents and deaths per one hundred million vehicle miles of travel.

In 1963, some 28 per cent of the fatal accidents on the highways involved single vehicles only — little chance for the driver to blame anyone or anything but himself. There was evidence of drinking in 47 per cent of the 163 single vehicle fatal accidents. Two accidents involving trains resulted in two deaths. In 1962, nine persons were killed on the King's Highways as a result of four train accidents. Pedestrian accidents accounted for 14 per cent of the total fatal accidents (577) in 1963.

Seventy-seven (77) fatal accidents, or 13 per cent of the highway total, resulted in two or more deaths in each. Drinking was in evidence in 31 of these accidents. The worst fatal accident to occur on the highways in 1963 was a head-on collision, which resulted in seven deaths. Three fatal accidents, all involving drinking, claimed five lives in each; four (4) resulted in four deaths in each and 18 with three deaths in each. Fifty-one (51) accidents claimed two lives in each. In all, 194 lives were lost in these 77 accidents, 28.1 per cent of the total (691) persons killed.

During the fiscal year 1963-64, the Department of Highways conducted 31 Traffic Seminars throughout the province in co-operation with the Ontario Provincial Police. Attending these seminars were 758 representatives from our regional and district offices; the Ontario Provincial Police districts and detachments. Also in attendance at these meetings were chief constables or senior officers from municipal police departments and county engineers or their assistants. Informal discussions at these seminars resulted in many highway problems being brought to the attention of the Department.

Seventy-eight (78) coroner's inquest reports were received during the fiscal year from the office of the Supervising Coroner for Ontario. These reports had reference to the recommendations of coroner's juries, made at inquests into fatal motor vehicle traffic accidents occurring on the King's Highways.

During the fiscal year, the Ontario Provincial Police General Headquarters, Toronto and districts, brought the Department's attention to several locations on the King's Highways which required attention. Studies were carried out by regional offices and where it was found necessary for the Department to take action, reports were prepared and forwarded to the Head Office or district concerned.

Functional Planning Section

I. C. Campbell, P.Eng., Functional Planning Engineer

The Functional Planning Section completed its first full year of operation during the period from April 1, 1963 to March 31, 1964, although with a staff

much below the numbers set up in the organization chart. The publication of "Functional Reports" increased from seven to 28 with an additional 87 in preparation.

Due to this new system of publishing reports, the number of projects completed during the year naturally was not as high as previous years. However, the output of interchange and channelizations showed a marked increase. The following reports from the Head Office group and the four regions (Southwestern, Central, Eastern and Northern) indicate the changes in our production this year as compared with the previous year.

De-centralization of the section continued with the Northern Region staff moving to North Bay on August 1, 1963, and the Eastern Region staff preparing to move to Kingston in August, 1964.

Head Office Functional Planning Subsection

P. J. Harvey, P.Eng., Functional Planning Review Engineer

This group, responsible for the review of all work produced by the four regions, also completed two "Functional Reports", prepared special reports on specific problems for the section, prepared numerous standards for use in the geometric design of highways, and worked on the preparation of a manual to be used for geometric design.

A summary of the work processed by the Head Office group and compared with the previous year is as follows:

Project Group	1962-63	1963-64
Functional reports reviewed	7	35
Functional reports prepared	....	2
Functional reports in preparation	3	2
Preliminary functional reports reviewed	35	75
Miscellaneous reports prepared	2	6
Miscellaneous reports in preparation	3	.
Work projects reviewed (including structures)	170	132
Non-work projects reviewed	49	61

Final	1962-63	1963-64
Design criteria prepared	7	6
Design criteria reviewed and revised	93	97
Assumptions, designations, reversions, C.A.H. criteria	105	108

Intersection Design Group	1962-63	1963-64
Interchanges	32	60
Channelizations	54	82
Service road designs	1	
Truck climbing lane designs	4	2
Minor intersections	40	10
Miscellaneous projects	32	40
Property sales processed	40	....
Property requisitions	....	. .
Applications	87	. .
Patrol yards and O.P.P. sites	16	. .
Service centres	....	2

Right-of-Way Group		
Property requests (plotted and reviewed)	580	500
Property requests (initiated or approved)	365	285
Property sales	1,065	1,115
Plans of subdivision (plotted)	470	550
Plans of subdivision (reviewed)	195	125
Description reference plan	45	40
Official plans	12	8
Amendments	....	60

Central Region Functional Planning Subsection

R. G. Burnfield, P.Eng., Regional Functional Planning Engineer

The Central Region processed a total of 1,106 jobs in this fiscal year as follows: 370 in District 4; 368 in District 6; and 368 in District 7.

Some of the larger projects worth noting are:

The Welland Tunnel in the City of Welland and the design of approach roadways.

The design of Highway 27 from the Q.E.W. north to C.A.H. 401.

The design of Highway 7 from Peterborough easterly.

The following table is a summary of work completed during 1963-64 and compared with the previous year.

	DISTRICTS							
	Hamilton		Toronto		Port Hope		Totals	
	62/63	63/64	62/63	63/64	62/63	63/64	62/63	63/64
Functional Reports								
Completed	2	6	1	2	1	2	4	10
In progress	....	8	....	7	....	5	....	20
Grading Work Projects								
Completed	8	8	22	3	8	3	38	14
In progress	8	1	11	3	8	1	27	5
Interchanges								
Completed	12	10	22	10	....	1	34	21
In progress	....	10	....	19	....	11	....	40
Channelizations								
Completed	6	7	11	17	6	17	23	41
In progress	....	....	....	8	....	6	....	14
Structures								
Completed and in progress	24	38	25	34	11	40	60	112

	1962-63	1963-64
Applications	330	320
Property sales and requests	45	658
Road closing, transfers, etc.	48	56
Assumptions and designations	13	72

Southwestern Region Functional Planning Subsection

W. R. Kinnear, P.Eng., Regional Functional Planning Engineer

This region completed a total of 796 jobs in the Chatham, London, Stratford and Owen Sound Districts.

Some of the more important projects were:

Highway needs in Port Stanley.

Grade separation on Highway 59 at Woodstock.

Highway needs from Sarnia to Wallaceburg.

Reconstruction of Highway 86 from Elmira to Highway 7 west of Guelph.

A summarized account of the total work accomplished is as follows:

LONDON	Chatham		London		Stratford		Owen Sound		Totals	
	62/63	63/64	62/63	63/64	62/63	63/64	62/63	63/64	62/63	63/64
Functional Reports										
Completed	1	2	....	4	....	1	....	3	1	10
In progress	1	5	2	8	5	7	7	7	15	27
Grading Work Projects										
Completed	1	1	10	3	10	2	3	1	24	7
In progress	5	2	4	4	2	3	1	1	12	10
Interchanges										
Completed	1	2	....	....	....	....	....	....	1	2
In progress	....	1	2	3	....	2	....	....	2	6
Channelizations										
Completed	7	16	7	8	6	1	4	4	24	29
In progress	1	2	12	10	1	5	1	4	15	21
Structure Projects										
Completed	4	6	3	6	6	1	6	3	19	16
In progress	6	5	5	6	....	17	....	7	11	35
Non-work Projects										
Completed	4	2	5	5	5	2	3	1	17	10
In progress	4	....	9	1	2	1	1	3	16	5

	1962-63	1963-64
Applications	257	172
Assumptions and designations	38	11
Closings	13	8
Transfers and reversions	11	13
Property requests	163	214
Property sales	43	204

Northern Region Functional Planning Subsection

J. A. Knowles, P.Eng., Regional Functional Planning Engineer

The Northern Region has been stationed at 269 Main Street West, North Bay, since moving from Downsview on August 1, 1963. This office is responsible for the functional planning work in the Huntsville, North Bay, Sudbury and New Liskeard Districts.

During the 1963-64 fiscal year, the following jobs worthy of special notice were completed:

Highway 35 — Highway 118 at Dorset southerly 7.1 miles in Huntsville Dist.

Highway 68 — LaCloche Channel to Little Current in Sudbury Dist.

Sec. Hwy. 520 — Structure and approaches at North Creek in Huntsville Dist.

The following table is a summary of the jobs completed and in progress:

NORTH BAY	Huntsville		North Bay		New Liskeard		Sudbury		Totals	
	62/63	63/64	62/63	63/64	62/63	63/64	62/63	63/64	62/63	63/64
Functional Reports										
Completed	....	2	....	....	....	....	....	1	....	3
In progress	10	6	4	8	1	1	3	2	18	17
Grading Work Projects										
Completed	....	1	2	1	....	4	2	5	4	11
In progress	....	1	1	....	2	4	....	3	3	8
Channelizations										
Completed	4	4	5	8	3	2	2	2	14	16
Structures										
Completed	....	2	1	....	....	....	....	....	1	2
Non-work Projects										
Completed	4	5	1	7	....	1	3	6	8	19

	1962-63	1963-64
Applications	50	57
Assumptions and designations	2	3
Property sales	22	257

Eastern Region Functional Planning Subsection

R. Gascoyne, P.Eng., Regional Functional Planning Engineer

Of the various projects considered during the past year, the following are worthy of special notice:

Highway 7 and 15 — New C.P.R. subway, easterly to intersection of old County Road No. 13, "Bells Corners".

Ferry docks and approaches at Rogers Road, east of Kingston and at Knapp Point, Wolfe Island.

All local by-passes with Controlled Access Highway designation in the Eastern Region are being investigated. An evaluation of existing criteria and conditions will promote a recommendation for a more uniform policy with regard to these special sections of highway.

A summarized account of the various works completed and in progress is as follows:

KINGSTON	Kingston		Ottawa		Bancroft		Totals	
	62/63	63/64	62/63	63/64	62/63	63/64	62/63	63/64
Functional Reports								
Completed	....	2	....	1	....	2	....	5
In progress	2	5	1	6	3	12	6	23
Grading Work Projects								
Completed	9	3	2	1	2	2	13	6
In progress	5	3	3	1	8	....	16	4
Interchanges								
Completed	3	....	....	....	....	....	3	....
In progress	....	5	1	1	....	....	1	6
Channelization								
Completed	5	4	4	4	1	3	10	11
In progress	....	....	....	....	....	....	....	....

Structures								
Completed	7	....	....	2	2	....	9	2
In progress	2	8	2	1	1	....	5	9
Non-work Projects								
Completed	1	9	2	2	1	5	4	16
In progress	....	1	4	2	....	3	4	6
Miscellaneous Jobs	2	....	2	3	1	....	5	3

	1962-63	1963-64
Applications	119	92
Assumptions and designations	2	9
Closings	..	5
Transfers and reversions	....	12
Property requests	7	34
Property sales	46	179
C.A.H. criteria	..	6

Program Section

W. G. Wigle, P.Eng., Program Engineer

The activities of the Program Section can be summarized under the following six groups:

Inventory Group

During the past year, the Highway, Structure and Railway Crossing units of the Inventory Group continued their duties in maintaining the engineering inventory on provincial roads, structures and railway crossings. Some 7,500 inventory sheets were processed and provided up-to-date basic information for the other units in the Program Section. Numerous requests for all types of inventory information were answered, these requests being received from other sections within the Department and also from outside.

The annual Highway, Structure and Railway Crossing inventory books were prepared. Several revisions to these books were made, particularly with respect to format. In addition, mileages were compiled for the mileage triangles used in the official road maps. Several requests for point-to-point mileages were also received and answered from various government departments and outside sources.

Advance Program Group

This unit investigates provincial highway sections, structures and railway crossings to determine needs and deficiencies. On this basis, the group prepares advance highway construction programs consisting of individual projects with type, extent and cost of improvement work. It has now established a tentative five-year advance program of construction so that planning, design and scheduling of projects can proceed. It continues to review this program with respect to project priorities, deficiencies, extent of work proposed and costs.

Current Program Group

This unit controls the current capital construction program by keeping a constant watch over contract awards, expenditures and changes in scope of work. During the past year, it prepared the annual "Ordinary Resurfacing Program" for award and the material for the yearly publication of the "Capital Construction Program". The latter is distributed in the form of a book to the Legislature and the communications media at the time of the budget presentation. In addition,

it prepared numerous reports with maps and graphs as requested by M.P.P.'s Chambers of Commerce and municipalities.

Scheduling Group

This group sets up the pre-engineering schedules for all projects on the current and advanced programs with control of the work flow from preliminary planning to contract preparation. In addition, it prepares and maintains a schedule of contract award dates to ensure that capital construction expenditures are kept at the level of funds voted by the Legislature for the fiscal year.

Special Program Studies Group

This group negotiates basic connecting link agreements and construction proposals with various municipalities throughout the province and carries out necessary liaison with the Board of Transport Commissioners and various railway authorities in matters pertaining to railway crossings.

During the past year, numerous municipalities submitted tentative applications for work on connecting links resulting in construction proposals which were checked, processed and approved. Submissions as required by the Capital Construction Program were made and a five-year program for grade separations, replacement of structures and for the automatic protection of crossings was updated and maintained.

Special Studies Group

This group is progressing with studies to formulate policies and warrants for control of access on Ontario's highways with respect to its various aspects. The studies include access control, roadside development, public utilities, subdivisions, set-backs, service areas, rest areas, by-passes and their control. By-passes are under study, as well, as "relief routes" with their effect on a community's business conditions — advantages and disadvantages of these routes. The effects of controlled-access highways on the value and use of abutting and contiguous properties and resulting economic activities are also taken into account.

At the same time, the group is collecting, classifying and analyzing economic data, population data, vehicle operation data, and statistics on transportation. These data are processed to aid in predicting future traffic growth and planning development on provincial highways. The statistical data on highways, subsidies, revenues, travel trends (past and future), etc., are supplied to consulting engineering firms engaged in highway research for the Department as well as for various sections within the department.

Northwest Region

H. A. Mantle, P.Eng., Asst. Planning Engineer (Northwest)

The Northwestern Region, at present located at Port Arthur, is responsible for the functional planning work and engineering surveys and traffic studies in Algoma, Cochrane, New Liskeard, Sudbury, Kenora and Thunder Bay Districts.

During the 1963-64 fiscal year the following jobs worthy of special notice were initiated:

Lakehead Expressway

The following table is a summary of the jobs completed and in progress:

District	Miles of Survey of Plans Plotted	Site Plans	Railway Crossing Plans
New Liskeard (14)			
Resources roads	16	3	.....
Cochrane (16)			
Secondary highways	51.8	7	1
Sudbury (17)			
Secondary highways	.....	.....	.....
Resources roads	10	2	1
Sault Ste. Marie (18)			
17 T.C.H.	3	.....	.....
King's highways	24	.....	.....
Fort William (19)			
17 T.C.H.	10	.....	.....
King's highways	15	.....	.....
Secondary highways	5.7	.....	1
Resources and access roads	45.5	9	3
Lakehead expressway	22	8	3
Kenora (20)			
King's highways	93.6	1	.....
Resources and access roads	8	2	.....
Secondary highways	.....	.....	1
TOTALS	304.6	32	10

Traffic Section

The following work was accomplished during the fiscal year:

Inventory Counts — Taken at predetermined locations throughout the year.

O.P.P. Seminars — Attended by members of the regional staffs at Dryden, Emo, Kenora, Timmins, Cochrane and Nipigon.

Field Work	— Speed studies	14
	Turning movements	10
	Road use surveys	3
	Traffic counts for Characteristics Section	11
Completed Studies	— Turning movements	7
	Speed zoning studies	9
	Intersection studies	7
	Road use surveys	3
	Signing studies	5
	Railway crossing surveys	11
	Other studies	6

Cartography

C. P. Robins, Supervisor

Early in the year maps at a scale of four miles to one inch of the single maps of Hastings and Muskoka were printed from bases revised in 1962.

Bases were revised and maps printed at the same scale as above of the combinations Dundas, Stormont and Glengarry, and Prescott and Russell; Perth and Huron; York and Ontario, and Carleton, Lanark and Leeds and Grenville; and of the single maps Renfrew and Lambton.

During the latter part of the year the bases for the combinations Essex and Kent; and Brant, Elgin, Middlesex, Oxford and Norfolk were revised in preparation for printing new maps in 1964.

The manuscript for a new county map (scale four miles to one inch) of York, Peel, Halton, Wentworth, Haldimand, Lincoln and Welland was completed and some work was done in scribing new bases for this map.

Some work was done on preparing a manuscript for use in making bases for a new county map of Brant, Oxford, Middlesex, Elgin and Norfolk.

A manuscript was prepared and some scribing was done on the bases for a new county map of Dufferin, Huron, Perth, Waterloo and Wellington; for the counties of Essex, Kent, and Lambton; for the counties of Bruce and Grey; and for the counties of Ontario, Peterborough, Victoria, and Northumberland and Durham.

A manuscript was prepared for use in making bases for a new strip map of Highway 401.

A great deal of work was done in preparing material and checking the work on a new set of county and district maps for Southern Ontario, scales one mile to one inch and two miles to one inch. These maps were prepared outside the Department.

Later in the year many of the cronaflex transparencies of these maps were revised and brought up to date to show new highways, new county roads and new municipal limits.

The base for the picnic site map was revised and brought up to date.

The new scribed bases were used to print the 1963 road map. Copy was supplied, all printed matter was proof read, and stages of the printing were checked.

During the year the bases were revised for the printing of the 1964 road map.

The leading map companies in Canada and the United States were supplied with information concerning new pavements and new highways so as to bring their road maps of Ontario up to date.

The maps of Southern and Northern Ontario, scale eight miles to one inch, and all the tracings of highway districts which are used as patrol maps, were revised and brought up to date.

Work was done from time to time on the following miscellaneous jobs:

(1) Checking by-laws

(2) Reviewing subdivision plans

(3) Revision of wall maps.

DESIGN BRANCH

JOHN WALTER, P.Eng., *Director of Design*

BRIDGE DIVISION

A. M. TOYE, P.Eng., *Bridge Engineer*

The activities of the Bridge Division are summarized under the following five sections which form the Division.

Bridge Planning Section

S. McCombie, P.Eng., Bridge Planning Engineer

During the year 155 proposed bridge sites were studied and reported on. Complete data covering 108 sites were prepared and submitted to the Bridge Design Section to be used for design purposes. In addition 40 sites for proposed municipal bridges were investigated and reported on.

Hydrological investigations were made in the case of 180 highway and municipal structure sites. An additional 40 hydrological reports which had been prepared by the Municipal Bridge Liaison Section were reviewed.

Problems involving navigable waters were dealt with in 20 cases. Negotiations were carried on with the railroad companies, the Federal Department of Transport, conservation authorities and other agencies whose interests in proposed structures were involved. Technical advice and assistance on bridge problems was also given to the Department of Lands and Forests and other government bodies.

Bridge Design Section

B. R. Davis, P.Eng., Bridge Design Engineer

Designs for 77 bridges were produced by the Bridge Division Design Section and 38 by consultants during the year.

Design of the structures in the Spadina Interchange on Highway 401 was completed. A number of these have now been built and are seen to be strikingly graceful structures with many novel features. These cast-in-place, continuous prestressed concrete slab bridges represent the most advanced technique in prestressed design and are unique on this continent. The design has been adopted by consultants for some of the other interchange structures on Highway 401.

The use of parapet walls in place of the standard steel or concrete handrails is general on the Highway 401 widening project. This reflects the latest thinking on protective railings. A low metal railing on top of the parapet provides a pleasing finish as well as added protection.

Advances have also been made in structural steel design. The new Highway 401 bridges at Hogg's Hollow are continuous welded plate girders in contrast to the deck trusses used in the older bridges. New techniques in plate girder design enable us to save about one third of the weight of steel and about $400,000 as compared to the conventional truss design.

Continuous plate girder design was also used for the new Bay of Quinte bridge which is 2,820 feet long. It is believed that this will be the longest contin-

uous steel girder bridge anywhere. There will be 17 spans varying from 140 to 250 feet long.

An unusual design was used on the Bear Pass Bridge on Highway 11, east of Rainy Lake. At this site a clear span of 360 feet was required but a shallow deck was also necessary because of limited head room. The solution was a 3-span steel girder bridge with short end spans which were counter weighted to balance the long centre span. Concrete side walls conceal the end spans which would otherwise look out of proportion. This gives the effect of a long, single span structure, graceful and slender, spanning the river.

For a number of years the policy has been to build high-level structures rather than movable bridges over commercial waterways. At Port Dover, however, a low-level bridge over the Lynn River was necessary and we designed a modern-type swing bridge which will use hydraulic cylinders for its operation. It will be the first hydraulically operated movable bridge on this continent.

Designs were also prepared for some 310 standard concrete and timber culverts with a total estimated value of approximately $3,000,000.

Other activities included checking designs of aluminum sign bridges; designing sign and light standard foundations; developing bridge standards; and combining computer programs into new, more comprehensive programs. Work was also begun on a bridge design manual which will be for the use of consultants and municipal road engineers as well as our own staff.

Bridge Control Section

A. E. McKim, P.Eng., Bridge Control Engineer

The Contract Engineer prepared 119 estimates and special provisions for structure contracts with a total estimated value of $10,640,777.

The Materials Control Officer prepared 952 purchasing requisitions for materials to be supplied by the Department with a value of $3,310,000. The materials requisitioned included 11,945 tons of reinforcing steel, 198,465 lin. ft. of piling and 40,630 lin. ft. of bridge handrailing. In all cases existing surplus material was used wherever possible. Arrangements were made for inspection of all materials.

The Draughting Supervisor continued with his primary function of training a pool of draughtsmen for use throughout the division while at the same time providing a variety of services such as calculating exact quantities of concrete and steel in all structures for final payment purposes; drawing hydrologic maps, drawing strip maps of major highways, preparing plans of old bridges which were to be demolished, making models, perspective drawings and montages of proposed structures for publicity purposes; etc.

The Construction Liaison Engineers assisted in solving construction problems when requested and in addition supervised the inspection of structural steel fabrication and prestressed concrete manufacture. Checking and approval of falsework plans was also carried out by this group.

Municipal Bridge Liaison Section

K. L. Kleinsteiber, P.Eng., Municipal Bridge Liaison Engineer

The approval of plans for municipal structures continues to be a major activity of the section. During the year 763 sets of plans were submitted and

processed, 636 sets of plans were approved consisting of 324 culverts, 279 bridges and 33 maintenance buildings. Wherever possible, discussions were held with municipal and consulting engineers in the planning stages of these projects. In this way basic requirements and geometrics were established and final approval facilitated.

Location studies, hydrology investigations and assistance with design were provided for a great many projects.

Standards for municipal bridges are gradually being brought closer to that for highway bridges. This requires a good deal of educational effort and close liaison with engineers and officials in the municipal field.

This section also investigated and commented on 30 load restricting by-laws submitted by municipalities.

Engineering Office Supervisor

W. M. Killin, Engineering Office Supervisor

During the year further progress was made in setting up a common filing system embracing both highway and municipal structures. The basic element of the system is the structure site which must be positively identified and located on maps. The new system is now in operation for a large part of the province and only 10 counties remain to be tied in. This system has enabled us to answer hundreds of inquiries.

Maps showing accurately the location of all structures are now being duplicated for use by the Municipal Roads Division in preparing a bridge inventory and needs study for municipal roads.

Summary of Bridge Construction

During the calendar year 80 structures consisting of some 19,000 feet of bridging were completed.

A complete listing of these structures is given in Appendix 4. Not included in this listing are 217 concrete culverts in spans ranging from four to 20 feet and costing $1,228,884.

ROAD DESIGN DIVISION

H. D. McMILLAN, P.Eng., *Road Design Engineer*

D. W. FARREN, P.Eng., *Assistant Road Design Engineer*

During this fiscal year the Road Design Division completed the design of 224 projects covering a total of 836.17 miles of highway construction and reconstruction work. The types and mileage of work completed are as follows:

Grading, Drainage, Granular Base and Paving	566.04 miles
Paving — Hot-Mix Asphalt	106.97 miles
Concrete	94.98 miles
Resurfacing	68.18 miles

Some of the major undertakings included in the above were:

Q.E.W.	9 Projects — including 7 structures

Highway 401	29 Projects — including 24 structures
Highway 403	5 Projects
Resources and Access Roads	7 Projects
Trans-Canada Highway	12 Projects
Ottawa Queensway	6 Projects
Service Areas	6 Projects
Patrol Yards	24 Projects

with the remaining 126 projects being normal new construction and reconstruction of rural and urban sections of King's Highways.

Intersection Detail Design Section

This section produced detail drawings of 33 channelizations, 19 cloverleafs and 11 interchanges.

Geometric Design Section

This section was established in April, 1963 to develop triangulation and traverse data and precise field alignment from functional plans, by both manual and electronic computer methods of calculation for interchanges. It provides a service function in supplying geometric data to the Bridge Division, the Intersection Design Section and the regional road design sections. The following work was produced by this section:

Geometric plans for 7 structures and 2 major interchanges with 2 structures partially completed.
Three interchanges partially completed.
Topographic plans for 2 major projects.
Detours designed for 2 major projects.
Up-dating of major plans for Highway 401 construction.

Highway Standards Section

This section has been preparing revisions to existing highway standards in keeping with modern trends and practices plus special standards designed to meet the needs of various projects throughout the province.

The widening of Highway 401, "Toronto By-pass", required the production of 70 special standards with indications that this figure will increase as the design work proceeds on the remaining stretches. It became increasingly important that the work being done by the various consulting firms be co-ordinated with all branches of the Department and with this in mind a Special Standards Manual was prepared to include all special standards that were or will be prepared for the Toronto By-pass with copies of the manual distributed to all concerned.

CENTRAL REGION

This region is responsible for road design work in the Toronto, Hamilton and Port Hope districts.

Projects designed were:

Granular Base and Paving	39 Projects
Grading	8 Projects
Structures and Approaches	10 Projects
Highway 401	10 Projects

Central Region processed 250 permits covering utility locations on highways within the three districts, and are at present supervising 35 projects under design by consultants;

180 Property Requests were processed;
600 Commercial Site Options were obtained;
20 Railway Board Estimates were processed;
two million dollars' worth of estimates with regard to the moving of utilities.

Some major projects prepared by Central Region were:

1. Highway 401 reconstruction to a 12-lane freeway, collector-distributor system, and the co-ordination and direction of consulting engineering firms engaged by the Department to carry out design on this project.
2. The Toronto International Airport connecting roadways to Highway 401, and Highway 27 and Dixon Road.
3. Highway 403 — completion of design of the Freeman to Wolfe Island section.

Special Studies Carried Out

1. A study of the Chicago Expressway collector-distributor system and preparation of a 20-minute film on design and operation features. Information gained by this study has aided materially in the development of design and operational features for Highway 401.
2. A continuing photographic diary covering the progress of Highway 401 reconstruction.
3. Stage construction, traffic handling, and detour studies in relation to the Metropolitan Toronto traffic pattern; again a continuing study.
4. The preparation of basic data, construction sequencing, and operation timing, for Critical Path Analysis on Highway 401 reconstruction projects — continuing.
5. Engineering investigational work to aid in the development of legislation to provide for the effect, on fronting properties, of Highway 401 reconstruction.

Drainage Reports Prepared

1. A hydrological survey of drainage areas crossing the Q.E.W. in the Hamilton to St. Catharines area.
2. Storm sewer special design for the Highway 401 collector-distributor roadway system.
3. A preliminary study of drainage for Highway 2 — Whitby to Oshawa.

In addition to the above, many isolated drainage problems were studied and reports and recommendations developed.

EASTERN REGION

This region consists of the Kingston, Ottawa and Bancroft districts.

Some 60 projects were designed during the fiscal year:

Grading, Drainage and Granular Base	45 miles
Hot-Mix Paving	30 miles
Structures and other miscellaneous projects	15 miles

The most noteworthy of the projects were:

1. The completion of projects on Highway 401 to 4 lanes.
2. The completion of Phase 3 of the Ottawa Queensway.
3. Phase 2 of the Ottawa approaches to the Macdonald-Cartier Bridge approaches at Ottawa.

Eastern Region also assisted in the experimental demolition of a structure at L'Orignal in the Ottawa district.

SOUTH WEST REGION

This region consists of the London, Chatham, Stratford and Owen Sound districts. A total of 50 projects were designed during the fiscal year.

With the exception of some underpasses, work was completed for the paving of Highway 401, which completes the design on this major highway.

Design of the grading and drainage for the Brantford By-pass, which is part of Highway 403, was completed and work is progressing on the design for the paving of the contracts.

NORTHERN REGION

Located in North Bay, Northern Region is responsible for work in the following districts:

Huntsville, North Bay, New Liskeard, Sudbury, the majority of Sault Ste. Marie and assists the North Western Regional Design Office with the work load in Cochrane.

During the fiscal year, the following projects worthy of note were completed:

1.	Highway 17	Sudbury city limits, easterly	1.6 miles
2.	Highway 17	Korah Road–Sault Ste. Marie	2.3 miles
3.	Highway 11	Orillia to Sparrow Lake Road	5.0 miles
4.	Highway 11	Tri-town By-pass	16.8 miles

Following is the summary of projects completed:

Grading and Paving	9 Projects
Grading	11 Projects
Granular Base and Paving	4 Projects
Paving	9 Projects
Structure and Approaches	2 Projects
Structures	11 Projects
Miscellaneous, Clearing and Patrol Yards	7 Projects

Seven grading and structure projects were designed by consultants under regional supervision.

NORTH WEST REGION

Work was performed on 60 projects during the fiscal year:

12 projects were completed in the Regional Office;
Three projects were completed, assisted by district forces;
One project awaits a decision from the Bridge Office before submission to Head Office. The above projects are detailed as follows:

Grading, Drainage and Granular Base	27.4 miles
Paving	35.2 miles
Granular Base and Paving	14 miles
Grading and Ditching	12 miles
Grading, Drainage, Granular Base and Paving	3.6 miles
Resurfacing	5 miles

Assisted by district forces (three projects):

Grading, Drainage and Granular Base	34.5 miles

Design Studies, Policy Development and Research

This past fiscal year has seen the culmination of considerable investigational and study work by the Road Design Division aimed at technological improvement of design policies, standards and procedure. The major areas of work in this field are:

1. *The Development of the Critical Path Analysis Technique and its Application:* This valuable engineering technique was first initiated by the establishment of an engineer in the Road Design Division, to study critical path scheduling, who was responsible, with the co-operation of the Operations Branch, Bridge Division, and Computing Centre, for developing this technique for the Department's purpose. With the completion of this development and acceptance of the Critical Path method, this work has now been transferred to the Electronic Computing Centre.
2. *A Policy on Highway Lighting:* Extensive research into lighting methods by other jurisdictions, the installation of a trial lighting system, and the evaluation of modern lighting equipment, resulted in the development of a superior system of glare-free highway lighting. The distinct advantages of the system developed includes low initial power and maintenance costs; uniformity, and freedom from glare, using a much lower number of poles and luminaries than other conventional systems.
3. *Guide Rail Standards:* To provide positive protection at piers and abutments, guide rail standards have been developed, based essentially on the Highway Research Board recommendations. Arrangements have also been completed for the trial installation of two types of prefabricated terminal sections, with a view to their adoption if successful.
4. *Use of Explosives for Demolition in Proximity to Structures or Buildings:* A report was prepared evaluating the current literature and the latest accepted theories relating blasting to structural damage. A demonstration project involving the demolition of an abandoned overpass, the firing of various test shots and the measurement of ground vibrations was carried out at L'Orignal, Ontario, to indicate to Department personnel the degree of accuracy and reliability with which the effects of blasting can be predicted in advance.

5. *An Economic Study of Asphalt and Concrete Pavements:* This study developed a rational formula relating the economic aspects of a wide variety of pavement types, for various cross section standards, incorporating granular base courses, pavement and shoulder costs. The method of presentation of this report allows a quick and reasonably accurate comparison of costs of the various types of pavements, in any of the 10 districts in Southern Ontario.

6. *Electronic Computer Programs — Application of Electronic Computation in Road Design:* The installation of the 7040 computer system necessitated the rewriting of existing 650 programs. The far greater capacity of this new computer system enabled us to make the new programs far more comprehensive, and to provide the designers and construction crews with data which are of great importance at the design and construction stage. In the following is a brief description of the programs.

    1. *7040 Road Elevation Program:* This program is in production. It tests the horizontal and vertical alignment for overlapping curves. If occurring, it lists the magnitude and the location and computes various possible solutions. It computes the distances from the centre-line and the elevations of the five breakpoints of the top of granular in a cross-section, observing changes in width of pavement and/or shoulders and super-elevated sections.

       These data are used by Road Design and Operations.

    2. *7040 Quantity Program:* This program is scheduled to be in production in September 1964. Using the basic information: "horizontal and vertical alignment, design criteria, soils data and standards," it automatically tests the alignment (see 1), selects the appropriate standard for each cross-section, and computes the following data for each cross-section: a) digital model, b) areas of the various components, c) quantities. It is possible to compute the data simultaneously for various grades, the limits to be determined by the designer, to arrive at optimum design.

    3. *7040 Deflection Angle Program:* Under development. This will provide the construction crews with the data needed to set out any combination of curves and spirals.

7. *Profile Quantity Tables:* A book "Profile Quantities" was completed and prepared for production showing in graphic form, for every classification of roadway, earth and rock work quantities from profile elevations. Graphs are compiled in increments of 0.1 feet from 0 to 25 feet in cut and fill.

8. *Contract Drawings:* Reduced size contract drawings in two colours was brought to the final stage of development and production. This marks a major step forward, not only in the economy and clarity of contract drawing reproduction, but also in the convenience in their use to both contractors and Department personnel.

9. *Rock Cut Control of Overbreak:* A preliminary economic study was made of the "Pre-Splitting" method of controlling rock overbreak and preparations were made for an experimental test section to be included in a 1964 contract.

10. *Investigation of Fatal Accidents:* In co-operation with the Highway Safety Officer, the Road Design Division carried out investigational studies of all fatal accidents in which the highway environment could be a contributing

factor to the accident. Where these studies indicate that some deficiency of the highway is a contributing factor, reports, including recommendations for correction, are submitted.

Further areas of research and study assigned to the regional offices are well under way, and interim reports were presented this spring at the Project Design Engineers conference. They are:

1. *Roadside Design for Safety — Eastern Region:* This study considers the cross-section of the highway beyond the edge of the shoulder relating physical characteristics such as guide rail, rounding, side slopes and ditch cross-sections to safety — continuing.

2. *Warrants for Urban Section — South Western Region:* The interim report included two criteria based on entrance frequency and building setback that would serve as indicators of need for an urban type of facility rather than rural. Evaluation and method of application is now under way.

3. *Standardization of Utility Placement within D.H.O. Rights-of-Way Central Region:* The preliminary report indicates merit in adopting some reasonable degree of standardization, with consideration not only to good practice and convenience, but also to clearing up the right-of-way aesthetically — continuing.

4. *Rock Cut Design and Muskeg Treatment — North Western Region:* A survey of practices used by other jurisdictions was carried out, an analysis of a number of Department projects completed, and recommendations for further study in this field were presented — continuing.

ENGINEERING SURVEYS DIVISION

Y. ANDERSON, O.L.S., *Superintendent*

The Engineering Surveys Division is responsible for all field engineering survey work and plan preparation work for the Planning and Design Branches in all but the Northwestern Region. Other responsibilities besides preparation work for the current and future work projects are: Precise level surveys, ground control surveys for photogrammetric plans, and standard surveys of existing highways for the purpose of updating existing plans and profiles.

This year some 1,364 miles of surveys, 975 miles of plans, 92 bridge site plans, 62 railway crossing plans and other associated surveys and plans were completed.

A summary of all work completed is as follows, recorded showing Head Office, Regions (by Districts) separately.

Head Office Engineering Surveys is comprised of the following groups: Precise Level Party, Training, Reference Group, Strip Map Group and a Drafting Group.

Precise Level Party

This summer we began a special Precise Level Survey Party, the purpose being to establish permanent and accurate bench marks along highways throughout the province to maintain a standard of indisputable accuracy.

In the past eight months a total of 67 precise level tablets were set with geodetic elevations, covering a distance of 98 miles. These were set in the following areas:

Clarkson to Highway 27 following Highway 122, Peel County Roads 18 and 1, Highway 5 and Highway 401.

London to St. Thomas and Mount Brydges following Wellington Road, Highway 401, Highway 4, Highway 2 and Highway 81.

Napanee (Highway 2) to Kaladar (Highway 7) following Highway 41.

During the Labour Day week-end this party set up a demonstration bush survey camp for a rover scout meet at the Sarnia boy scout camp at Grand Bend. This was attended by rover scouts from both Canada and U.S.A.

Training

Five qualifying courses with examinations were conducted, these being two Junior Draftsman courses and three Junior Instrumentman courses. Also three Engineer's Assistant Grade I to II qualifying examinations were given during the year with a total of 87 candidates.

Also six tracers attended drafting training instruction courses.

Reference Group

Existing highway plans were kept up to date by the addition of 4,681 land plans, deeds, property sales, registered subdivisions, reference plans and annexations. A total of 638 new plans and profiles of all types were numbered and cross-referenced. Highway number changes involved updating 442 plans and profiles.

Strip Map Group

Highway strip maps were prepared for 14 new highways, 37 strip maps were revised and 49 strip plans were retraced. Also, during the year the plan and profile numbers were changed on all strip plans (290) due to the new numbering system. Prints of these plans are supplied on a regular basis to 64 individuals throughout the Department.

In addition to the above, various miscellaneous charts, graphs and floor plans were produced.

A complete set of Militia maps, Lands and Forests maps, County and Township maps are kept up to date by this group, also a Militia map index overlay for the road map is maintained and updated periodically.

Drafting Group

The Head Office Drafting Group completed the following plans and profiles:

	Plan Mileage	Bridge Site Plans	Railway Crossing Plans
Dist. No. 3	1.2	....	
Dist. No. 4	7.1	....	
Dist. No. 6	32.6	....	
Dist. No. 7	16.0	....	
Dist. No. 8	11.8	2	
Dist. No. 9	18.0	....	
Dist. No. 10	2.7	....	
Dist. No. 11	54.8	1	

	Plan Mileage	Bridge Site Plans	Railway Crossing Plans
Dist. No. 13	6.2		
Dist. No. 17	9.2		
Dist. No. 18	34.8	1	
Dist. No. 19	0.4		
Totals	194.8	4	

In addition to the above, the following variety of special plan work was completed during the year:

One Functional Report was drafted for Functional Planning, Southwestern Region; one display plan for the Canadian National Exhibition.

Numerous additions sent in by Districts Nos. 3, 4, 5, 6, 7, 9, 10 and 18 as per Circular No. 60-104.

This special work accounted for 12 per cent of the drafting staff for the whole year.

SOUTHWESTERN REGION

	Plan Mileage	Survey Mileage	Bridge Site Plans	Railway Crossing Plans
Dist. No. 1	25.4	51.4	4	7
Dist. No. 2	80.6	132.7	9	7
Dist. No. 3	71.1	88.5	13	16
Dist. No. 5	40.8	99.9	7	8
Totals	217.9	372.5	33	38

In addition to above, 55 miles of photo control was set in the field.

CENTRAL REGION

	Plan Mileage	Survey Mileage	Bridge Site Plans	Railway Crossing Plans
Dist. No. 4	62.0	100.0	10	2
Dist. No. 5	17.6			
Dist. No. 6	36.8	59.0	5	6
Dist. No. 7	106.8	175.0	5	4
Dist. No. 13	6.1			
Dist. No. 17	7.0			
Dist. No. 18	1.0			
Dist. No. 20	16.9			
Totals	254.2	334.0	20	12

In addition to the above, a variety of plans were completed during the year, such as tracing photogrammetry plans, additions in Districts Nos. 4, 7 and 13 as per Circular 60-104 and other miscellaneous plans. This work accounted for 6 per cent of the drafting staff for the whole year. Also, 12 miles of original cross sections were completed and 169 miles of photo control was set in the field.

EASTERN REGION

	Plan Mileage	Survey Mileage	Bridge Site Plans	Railway Crossing Plans
Dist. No. 7		6.0		
Dist. No. 8	67.6	136.5	8	4
Dist. No. 9	28.7	82.5	4	2
Dist. No. 10	42.4	104.6	3	2
Totals	138.7	329.6	15	8

In addition to above, 15.0 miles of original cross sections were completed and 57.0 miles of photo control was set in the field.

NORTHERN REGION

	Plan Mileage	Survey Mileage	Bridge Site Plans	Railway Crossing Plans
Dist. No. 11	18.2	93.0	9	1
Dist. No. 13	41.4	44.1	2	....
Dist. No. 14	51.1	114.1	6	2
Dist. No. 17	31.5	71.7	....	1
Dist. No. 18	27.3	5.5	3	....
Totals	169.5	328.4	20	4

In addition to above 14.0 miles of original cross section were completed and 22.0 miles of photo control was set in the field.

Grand Totals	975.1	1,364.5	92	62

PHOTOGRAMMETRY DIVISION

M. H. MacLEOD, P.Eng., *Photogrammetric Engineer*

Line Location and Special Projects

During the fiscal year the Line Location and Special Projects Section projected 336 miles of new location, the total for 16 separate projects.

This group carried out a total of 44 separate drainage studies for Road Design and Hydrology, totaling 4,918 square miles, and prepared a total of 12 mosaics covering 465 square miles for planning and display purposes. A mosaic of Northern Ontario was prepared at the scale of 2 miles = 1″ covering an area 32 feet long by eight feet wide.

Compilation and Draughting

The Compilation and Draughting groups produced some 11 study plans at the scale of 400′ = 1″ covering 270,933 acres and revised one plan at the same scale covering 9,600 acres. They produced seven study plans at the scale of 1,320′ = 1″ covering 2,630 square miles.

Stereoplotting

The Stereoplotter and Control Section produced seven plans at the scale of 200′ = 1″ covering 9,996 acres that were contoured but not traced and two plans at the same scale covering 4,000 acres that were contoured and traced.

They produced 14 traced contour plans at the scale of 100′ = 1″ covering a total of 16,823 acres, two plans at the same scale covering 76 acres contoured but not traced, and revised one plan at the same scale covering 6,400 acres.

Eight plans were produced and traced at the scale of 50′ = 1″ covering 1,556 acres.

Five large-scale engineering plans at 40′ = 1″ were produced showing contours at a 2′ interval and cross-sectioned every 50 feet. These covered 1,693 acres.

Three bridge site plans were produced at the scale of 40′ = 1″ covering 455 acres and three plans at the scale of 20′ = 1″ covering 52 acres.

This Section produced by three dimensions on the multiplex, 110 miles of cost comparison profiles on access roads in Northern Ontario.

During this fiscal year a total of 33,110 photographs were ordered from the Department of Lands and Forests to replace older photography held in our files.

This year the photo files were divided by Regions and the photography sent to the various Regional Headquarters at North Bay, Kingston, Fort William and London. This removed some 50,000 photographs from Head Office files.

This year also saw the purchase of a C.P. 18 Log-Etronic printer for the production of Kelsh diapositives. Some 800 dodged prints were produced from negatives flown especially for this Department.

SERVICES BRANCH

L. R. EADIE, *Director of Services*

The Services Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the department.

Administrative Section

J. L. Monkman, Administrative Officer

Plans for a general accounting and personnel function to serve the whole of the Services Branch went forward in 1963. The nucleus of this section will be the Land Surveys Section accounting group.

This section will prepare expenditure forecasts and budget, maintain records and statistics, and look after general accounting and personnel records, transactions, etc.

Effective date for full operation is April 1, 1964.

Documents Section

H. A. Broom, Superintendent

The Documents Section is responsible for the custody of the department's records, including correspondence and plan files, libraries, microfilming, and instruction manual and circular editing and writing.

The value of services rendered by Documents Section is indicated by the extensive use made of these services such as:

Correspondence files searches	20,000
Plans (handled for reference purposes)	79,000
Plans (whiteprint reproductions requisitioned)	77,000
Miscellaneous reproductions (correspondence, etc.)	312,500
Library circulation (books loaned)	5,000
Press clippings (reproduced and distributed)	11,000
Documents microfilmed	6,000,000

A preliminary study was conducted during the year to estimate the possible advantages of using computer-oriented information retrieval in conjunction with correspondence, plans and library operations. During the coming year, an appointed study group will investigate the proposed system and prepare an evaluation report of such an installation.

An effort to cancel all circulars issued prior to 1960 either by reissue or inclusion in a manual was successful to the point that but eight (for the years 1958 and 1959) are still under review. New manuals have been written and a number of old manuals have either been completely rewritten or revised so as to bring them in line with changed procedures.

Equipment Section

W. G. Cooke, P.Eng., Superintendent

Technical supervision of all D.H.O. equipment is the responsibility of the Equipment Section. The head office staff prepares specifications, inspects all

major equipment purchases, develops new machines, and supervises generally the maintenance of all departmental equipment. Information and advice on the replacement and disposal of equipment is provided by this section.

A continuing study and reporting on equipment usage and repair costs is being carried on by the section in conjunction with the Electronic Computing Section.

General supervision and organization of D.H.O. garages, staffs, equipment, records, and procedures, as well as maintenance methods and programs, are the responsibility of the section.

The section operates two garages — District No. 42 at Downsview, and Surrey Place at the Parliament Buildings. It also operates the Instrument Repair Shop at Downsview. Its Mobile Training School was active throughout the province, giving courses on D.H.O. mechanics and allied trades.

Twenty-five miles of asphalt roads were "deslicked" by the section's deslicker.

The section's Tree Saver moved and planted 1,365 trees. The crews also moved hedges and planted shrubs and bushes.

The section arranged for and supervised the drilling of 84 wells. The two well-testing units cleaned and tested 81 wells.

Over 80 asphalt distributors, either owned by the department or used on work in which the department had an interest (contract, municipal, etc.), were inspected by the section's personnel and certified for service. New and more effective testing equipment has been developed and built in the District No. 42 garage. This will be used experimentally in the coming year.

Staff is supplied by the section for instrument evaluation studies, special engineering work, and evaluation of ferries.

The section is responsible for the control of parking spaces for employees, and the policing of the parking lots at Downsview.

Drives, parking lots and miscellaneous areas adjacent to the department's buildings at Downsview, were maintained by the section.

Land Surveys Section

W. D. Ratz, O.L.S., P.Eng., Superintendent

The Land Surveys Section is responsible for making all legal land surveys and for the preparation and registration of all plans required for the acquisition and disposal of land and for the assumption, reversion, designation and closing of highways.

The section obtained registration of 1,884 plans in the appropriate Land Titles and Registry Offices during the fiscal year.

The following table outlines the various types of plans prepared by Land Surveys Section. The plans are listed by type and grouped according to function. Included in the table are the number of plans prepared and the total mileage of each type.

During the fiscal year 80.49 miles of highway were designated as controlled-

access highways. This figure includes the designation of the new Malton airport road, the proposed Lakehead Expressway and a portion of the proposed diversion of Highway 401 in the townships of Leeds, Lansdowne, Escott and Yonge. The total mileage of controlled-access highways in the province is now 1,544.31. One interchange was designated for which no mileage was added. The widened right-of-way of Highway 401 between Yonge Street and Weston Road was also designated but the total mileage was not increased.

The section conducted a training course for field personnel during the year. The course was attended by 20 candidates. Land Surveys qualifying examinations for field and drafting staff were tried by 113 candidates of whom 73 passed. One passed with a supplemental. The apprenticeship program for Ontario Land Surveyors is being continued by this section. During the year three apprentices passed the final examinations.

Co-ordinate control surveys are in progress on sections of Highways 27, 401 and 403 in the vicinity of the west boundary of Metropolitan Toronto. This survey operation employs electronic survey instruments capable of measuring within a fraction of an inch any distance from 50 feet to three miles, and a transit which allows direct reading on angular measurement to one second. In co-operation with Topographical Surveys, Department of Mines and Technical Surveys, Ottawa, a net of control monuments with geodetic values has been established between Metropolitan Toronto and Oakville on Highways 401, 10, and Q.E.W. These monuments not only serve as an expansion of the Metropolitan Toronto net but will provide a basis for co-ordinate control surveys which have proved beneficial to the department's engineers when determining the final right-of-way requirements for the proposed construction of highways such as 401. A co-ordinate control survey to assist the consultant engineers with the pre-engineering was completed for the proposed Welland Vehicle Tunnel. The co-ordinate control survey on the Toronto By-pass section of Highway 401 was completed between Highway 27 and Highway 48.

Appendices to this report give details of controlled-access highway designations and assumptions, designations, reversions and transfers of sections of the King's Highway, Secondary Highway and Tertiary Road systems.

TOTAL NUMBER OF PLANS AND MILEAGE

Type	Nomenclature	No. of Plans	Mileage
Plan Types A-G Inclusive—Acquisition of Lands			
"A"	Land Plans	928	321.28
"B"	Amended Land Plans	85	1.08
"C"	Land Plans Acquiring Limited Interest	48	6.65
"D"	Plans of Abandonment	40	4.50
"E"	Crown Land Plans	127	241.19
"F"	Amended Crown Land Plans	18	.....
"G"	Crown Land Abandonment Plans	45	22.01
Plan Types I-M Inclusive—Assumption of Existing Highways			
"I"	Preliminary Assumption Plans Acquiring an Existing Highway	27	180.15
"J"	Amended Preliminary Assumption Plans	4	.....
"K"	Assumption Plans (Replacing)	106	195.05
"L"	Assumption Plans	119	22.13
"M"	Amended Assumption Plans	13	.....
Plan Types N-P Inclusive—Designations of Highways			
"N"	Proposed Highway Plans	10	52.17
"O"	Highway Plans	109	564.20
"P"	Controlled-access Highway Plans	.....	.....

Plan Types Q-T Inclusive—Transfer and Closing of Highways			
"Q"	Reversion to Road Authority	4	7.19
"R"	Transfer to Municipality	58	47.80
"S"	Closing of Road, Plans to Illustrate Route Closed by Order-in-Council	69	26.11
"T"	Road Closing Plans (Ontario Municipal Board)	5	....
Plan Types H and U-X Inclusive and Others—Miscellaneous and Special Plans			
"H"	Navigable Waters Protection Act Plans	7	.....
"U"	Plans to Illustrate Descriptions	636	130.05
"V"	Survey Plans of Boundaries — Supplementary	54	55.86
"W"	Indian Affairs Plans	7	1.64
"X"	Connecting Link Designations and Agreements	69	102.74
	Miscellaneous Plans	166	50.91
	TOTALS	2,754	2,032.71

Office Services Section

S. C. Booth, Superintendent

The Office Services Section is responsible for the procurement of office supplies, furniture, office equipment, stationery and medical supplies and for the distribution of these to all districts, branches, and sections of the department. The Stationery Stores warehouse at Downsview maintained an inventory of about 2,500 separate items, processing some 22,000 requisitions. The value of shipments was in excess of $1,138,000.

The section is responsible for the servicing and maintenance of mechanical office equipment such as typewriters, calculators and similar items for all branches and districts. Expenditure for the year was more than $95,000.

The Office Services Section operates two major Reproduction Units — Whiteprint, including photography, and Reproduction — Offset.

The Whiteprint and Photographic Unit processed some 24,000 requisitions, and produced approximately four million lineal feet of whiteprints and some 20,000 negative and positive prints.

The Reproduction-Offset Unit processed some 5,500 requisitions, and produced over eight million impressions from 43,398 printing plates.

The section is responsible, in conjunction with the Canada Post Office, for providing postal service to all Department of Highway's districts, regional offices and offices at Downsview and the Metropolitan Toronto area.

Property Section

R. W. Bond, Superintendent

The Property Section is responsible for the acquisition of property and/or property rights required for highway purposes, and for the settlement of claims arising therefrom. Also, the section is responsible for the management and ultimate disposal of land and buildings surplus to highway requirements.

During the year, 3,748 new agreements were made with property owners. The carry-over from the previous year of 762 unpaid agreements added to the number of new agreements making a total of 4,510 to be paid. Of this total, 3,669 were paid, the amount involved being $7,999,046.21. The number unpaid at the end of the year was 841.

At the close of the fiscal year there were 1,805 property owners with whom agreements had not been negotiated compared with 2,212 at the same time last year.

The purchasing of property for Highway 401, Windsor to Quebec border, is progressing satisfactorily. Of a total of 5,270 owners, 5,166 agreements have been negotiated, leaving 104 to be settled.

The purchase of property for the widening of Highway 401 from Yonge Street westerly to Highway 27 continues. A total of 114 properties, including 45 buildings, were purchased during the fiscal year, the expenditure involved being $1,534,252. To date, 296 properties, including 188 buildings, have been purchased of which a total of 166 buildings have been removed or demolished by the methods indicated below:

(1)	Invitation tender	85
(2)	Public auction	55
(3)	Demolished by highway contractor	13
(4)	Public tender	10
(5)	Demolished under agreement	2
(6)	Direct	1

Revenue from the sale of surplus property along Highway 401 amounted to $746,097.21 which added to the previous recovery of approximately $3,120,000.00, gives a cumulative recovery to date of approximately $3,866,097.21.

Twenty-six applications were made to the Ontario Municipal Board for determination of compensation, which added to the previous applications made (carry-over), totals 47, categorized as follows:

Appointments heard and awards made	26
Settlements made and applications or appointments cancelled	10
Appointments not yet heard	4
Applications awaiting the granting of appointments	7
TOTAL	47

During the year, Property Section personnel made 2,871 appraisals. During the same period, independent fee appraisers completed appraisals on 126 properties.

At the close of the fiscal year, 2,788 properties which were recorded as surplus to D.H.O. requirements were in various stages of processing for disposal.

Revenue from the sale of surplus property totalled $1,244,044.68 as compared with the previous year of $1,208,145.43 and revenue from leased properties amounted to $218,302.54.

Regional Services Managers Section

In 1963, approval was given to the proposal to change the Services Branch organization to create a Right-of-Way Division. The effective date to be April 1, 1964.

These organization changes were planned to provide a more efficient operation. The property acquisition and land surveying groups and the administrative

group in each of the five regions will be combined into a single co-ordinated unit reporting directly to a Regional Services Manager who will report to the Director. These groups formerly operated as three separate units, each reporting to head office.

The plan of re-organization was developed under the direction of the Superintendent of Properties, the Superintendent of Land Surveys, the Administrative Officer, and Regional Services Managers.

Following is a list of Regional Services Managers and the region to which each was assigned:

1. M. W. Robinson.....Southwestern Region
2. D. W. Baird.....Eastern Region
3. N. D. Bennett.....Central Region
4. H. Aron.....Northern Region
5. D. F. Walton.....Northwestern Region

Special Services Section

C. S. Moase, Manager

The Special Services Section acts for the department, in liaison with the Department of Public Works, on all matters pertaining to buildings, building sites, office and shop space, and communications, including telephone, teletype and radio.

The administration of service centres on controlled-access highways was transferred to the Special Services Section in September of 1963 and the former Service Area Section was abolished.

Service Centres

The section is responsible for administering the department's policy regarding the selection, development, leasing and subsequent inspection of service centres and the development of "safety rest areas" on controlled-access highways.

The eight service centres established on Highway 401 in 1962 have been in operation for a year and their use by the travelling public has exceeded all expectations. During the year, contracts were awarded for the erection of six additional service centres on Highway 401. Construction is scheduled to be completed in the spring of 1965.

The two service centres on Highway 400 are operating satisfactorily and new leasing arrangements have been completed. Both leasees have carried out extensive renovations to existing buildings and grounds which will vastly improve the service rendered.

Picnic areas have been established adjacent to existing service centres on Highway 401, and during the year wells were drilled and seeding, mulching and tree planting operations carried out. One picnic area only was sufficiently completed during 1963 to be available for public use. It was extensively used and favourably accepted. The remaining sites will be available to the public in July 1964.

The need for "safety rest areas" is being investigated. These areas will provide the motorist with limited facilities such as picnic tables, water and comfort stations. Suitable sites are being selected and basic preliminary work initiated.

Buildings

All departmental space requirements are studied by the accommodation staff. Arrangements are made with the Department of Public Works for added leased space and new buildings. This year, it was necessary to lease an additional 3,400 square feet of office space at North Bay and, by consolidation of the staff at Kingston, leased space requirement was reduced by 2,100 square feet. Thirty-one applications for new buildings were submitted to the Treasury Board. Among the buildings approved by Treasury Board were the Eastern Regional (Kingston) office and the Fort William repair garage.

Preliminary architectural designs and plans for required buildings were prepared by the section's draughting staff and recommended to the Department of Public Works.

Under arrangements with the Department of Public Works, seven metal garages, 52 salt sheds and eight temporary patrol offices were constructed under the supervision of the section. Thirty-one property requests for new building sites were received. Of these 25 were approved.

Maintenance of department-occupied buildings and related services were done under the general supervision of the section's staff.

Communications

During 1963–64 the section processed a total of 2,738 requests for communications facilities.

The number of teletype messages handled by the section during 1963–64 was 201,192. A teletype unit was installed at Fort William Regional Office.

Five mobile radio systems were installed in 1963–64, one at each of the following districts: North Bay, Bancroft, Sudbury, New Liskeard and Cochrane.

Radio propagation surveys were completed for proposed mobile radio systems for Fort William, Kenora and Sault Ste. Marie Districts. These districts will be equipped with mobile radio by November 1964.

A comprehensive intercommunication system is being installed at the Garden City Skyway toll plaza.

Wide area telephone service (W.A.T.S.) facilities have been installed in the following department offices: Kingston District, Kingston Regional, London Regional, Ottawa District, Hamilton District, Port Hope District and Stratford District.

Major relocations of telephone systems were carried out at Downsview owing to the movement of a large number of sections within the Administration Building. The number of telephones in use by the department increased by three per cent.

Supply Section

R. W. Rawlings, Superintendent

The Supply Section provides the material purchasing and distribution service for the department. This section maintains a Purchasing Office, Central Stores Warehouse, Material Control Unit and a complete Bailey Bridge service.

Most construction and maintenance materials and equipment are procured by the purchasing office for distribution throughout the department. Most

materials are bought on a competitive basis and, normally, tenders on supply contracts are invited or advertised. Some supply contracts are advertised, especially when new sources of supply are being sought. Each year's business requires the issue of about 10,000 purchase orders covering goods to a value of about $30,000,000.

Central Stores provides maintenance and construction materials to all branches of the department. Specifications and quality are rigidly controlled at central stores and an overnight delivery service is provided for most items.

This warehouse carries stocks of about 1,500 different items. Some of these are reinforcing steel, bridge piling, hardware, paints, scotchlite, tools, catchbasins, sign blanks, safety clothing and devices, reflectorizing beads and many other materials used in the highway program.

The value of inventory at central stores is about $1.5 million and annual volume of shipments reaches about $2.5 million.

Central stores also provides a complete Bailey bridge service. Reconditioned and tested bridge parts are provided, as required throughout the province for emergency bridging. This service is of particular value for construction detours and during emergencies created by floods, washouts and similar situations. Bailey bridges are also available to municipalities on a loan basis. Supplies of Bailey bridge parts are stockpiled in each of the five regional depots. Maintenance services are provided at each of these depots.

The material control unit arranges for disposal of all surplus and obsolete equipment and materials. Used equipment is usually sold during the spring and summer months at public auction. These sales have proven to be an effective method of disposing of such units. A comprehensive record is maintained of surplus materials from construction projects and all contract requirements are screened and, when practicable, surplus materials are moved to suitable alternate projects.

Each year, between 200 and 300 sales of surplus and obsolete materials are held, yielding a revenue of about $350,000.

Head Office Supply Supervisors, working under the direction of the Material Control Supervisor, review purchasing, inventory control and material distribution methods with district personnel.

Tenders Section

T. M. Fraser, Manager

The Tenders Section is responsible for the processing of all tenders on engineering projects, supply contracts, obsolete equipment and material sales, property sales and Special Services projects.

Formal public openings of tenders on all engineering projects are arranged by this section. Provision is made for attendance of the public at tender openings for supply and invitation bid contracts, property, material and equipment sales.

The section distributes all tender forms and tendering material and maintains an up-to-date register of contractors and suppliers.

The Tenders Section places all advertisements relative to contract tendering, auction sales, expropriation notices, etc. The section also places advertisements for district and section requirements and processes all accounts for advertising.

When fees are levied for tendering material, the section collects and provides proper accounting for such fees. In addition, the section distributes and collects fees for the manual on "General Conditions and Standard Specifications of the Contract". Revisions are sent to all purchasers of this manual.

The section also distributes standard-size specification revisions to all contractors.

The section manager or his assistant acts as secretary of the Property Approval Committee which meets weekly to review and process property appraisals, purchase and sale approvals.

Effective in July, the Parliament Buildings address was discontinued and the Downsview postal address was established as the address for receipt of all tenders.

During the 1963–64 fiscal year, the Tenders Section issued approximately 2,150 advertising orders covering the placement of some 2,800 advertisements. Total cost of advertising was $97,771.42.

Tenders were called as follows:

Engineering Contracts	
Contracts processed	445
Contracts awarded	436
Tendering material released(Plans, Profiles, etc.)	3,881
Net tenders processed	2,370
Average number of bids per contract	5.33
Engineering Contracts—Invitation Bids (Contracts less than $10,000.00 in value)	
Invitation contracts processed	94
Tendering material released (sets)	709
Net tenders processed	275
Average number of bids per Invitation Contract	3.0
Property Sale Transactions (Public Tender)	
Sales processed	24
Net tenders processed	48
Average number of bids per sale	2.0
Material Requirements	
Supply contracts and enquiries processed	3,974
Net tenders processed	17,674
Average number of bids	4.44
Obsolete Material Sales	
Number of sales processed	44
Net number of tenders processed	170
Average number of bids per sale	4.0
Total Expenditure	$138,823.91
Gross Revenue (Sale of Tendering Material)	34,150.00
Refunds	80.00
Net Revenue (Sale of Tendering Material)	34,070.00
Gross Revenue (Sale of Specification Manuals)	1,305.00
Refunds	15.00
Net Revenue (Sale of Specification Manuals)	1,290.00
Total Net Revenue (All Items)	35,360.00

PERSONNEL BRANCH

J. POGUE, *Director*

The Personnel Branch administers recruitment and placement of staff, staff transfers and promotions, training, organization and classification, personnel records, staff establishment of branches, the departmental safety program and the Public Service Superannuation Act. It is the branch responsible for the administration of the Public Service Act, and Regulations, within the department, and it is responsible for the administration of similar departmental policies and procedures affecting the unclassified staff.

The branch publishes a personnel manual, supplied to the supervisor of each major unit of organization, containing information on both Department of Civil Service and Department of Highways policies and procedures. An accompanying manual, also published by the Personnel Branch, contains all published class specifications utilized by the Department.

These publications are augmented as the need arises by circulars, published over the signature of the Deputy Minister, detailing such matters as new salary rates, changes in personnel procedures or policies and other matters of related supervisory and employee interest. These circulars are widely distributed to both major and minor organizational units for display on bulletin boards, so that employees may be made aware of all new developments as soon as possible.

All employee grievances made under the Public Service Grievance Procedure are reported by supervisors to the Personnel Branch, to ensure that prompt action may be taken where necessary.

Should the grievance reach the stage of a hearing before the Public Service Grievance Board or before a Classification Rating Committee designated by the Chairman of the Civil Service Commission, the departmental viewpoint is presented by a member of the Personnel Branch staff.

Recruitment Section

Employment requirements are determined by the Recruitment Section after consultation with branch heads and district engineers. The recruitment and selection program is then carried out. This section also arranges transfers of staff within the Department, and transfers to and from other departments.

From April 1, 1963 to March 31, 1964, there were 6,596 replacements and additions to staff. This figure includes 4,999 seasonal workers and 762 students.

The Recruitment Section hired 458 persons, the remainder of those hired being recruited locally by the district offices. The staff engaged by the Recruitment Section was allocated as follows:

Administration Branch	41
Design Branch	60
Financial Comptroller's Branch	57
Operations Branch	131
Personnel Branch	13
Planning Branch	24
Services Branch	132
TOTAL	458

The staff of the Recruitment Section, during this period, conducted 4,511 interviews with applicants for employment and, in addition, conducted many counselling interviews.

The graduating classes in civil engineering at Assumption University, Carleton University, McMaster University, Queen's University, University of Toronto, Waterloo University and University of Western Ontario were interviewed and selections made. Interviews were also carried out at St. Catharines where selections were made for staffing the Garden City Skyway.

Competition letters were circulated throughout the Department describing senior positions as they became vacant, inviting qualified members of the staff to apply.

Records Section

The Records Section is responsible for the proper documentation, recording and filing of employee transactions, for ensuring that prescribed procedures are followed in all transactions and for compiling personnel statistics as required.

The section is also responsible for maintaining employee anniversary merit increase dates, from which eligibility for merit increases for all eligible employees of the Department is determined. In addition to being responsible for maintaining these records on punched cards, this section now prepares Merit Increase lists for certification by the Deputy Minister, authorizing salary increases and prepares lists for certification by the Deputy Minister for salary increases occasioned by Salary Schedule Amendments that have been authorized by Order-in-Council, and published by the Department of Civil Service.

Responsibility also rests with this section for the preparation and submission by the Deputy Minister to the Secretary of the Treasury Board, of a report on a quarterly basis showing the numbers and amounts of accelerated merit increases granted by the Deputy Minister within the Department. A similar report on an annual basis is prepared for submission by the Deputy Minister, through the Minister, to the Lieutenant-Governor-in-Council.

All questions connected with benefits derived under the Public Service Superannuation Act are directed to this section, as are queries connected with attendance and vacation credits.

The position inventory for the entire Department, which is required under the Ontario Civil Service Reclassification Program, is maintained by this section, being documented both on the personnel files and on punched cards, involving approximately 18,000 transactions in addition to those mentioned below.

At the end of the fiscal year the Department's work force was 12,754, which was distributed as follows:

	1963-64	1962-63	1961-62
Deputy Minister's and Administration Branch	302	303	264
Financial Comptroller's Branch	279	255	253
Services Branch	1,191	1,248	1,245
Planning Branch	350	.....	.....
Design Branch	744	.....	.....
Operations Branch	9,830	9,570	9,867
Personnel Branch	58	52	56

	1963-64	1962-63	1961-62
* Office of the Chief Highway Engineer	.....	.....	8
† Planning and Design Branch	.....	1,075	1,057
# Municipal Roads Branch	.....	.....	24
= Legal Branch	.....	.....	40
TOTALS	12,754	12,503	12,814

* This figure is now included in Deputy Minister's and Administration Branch.
† These figures are now divided into two separate branches, as indicated above.
This figure is now included in Operations Branch.
= This figure is now included in Administration Branch.

The total work force of 12,754 includes salaried and hourly-rated personnel and is grouped as follows:

	1963-64	1962-63	1961-62
Regular and probationary staff	7,860	6,757	5,801
Monthly-rated casual staff	1,540	.....	.....
Hourly-rated casual staff	765	.....	.....
Seasonal staff (monthly and hourly)	2,589	.....	.....
* Casual staff (monthly and hourly)	.....	4,904	5,924
* Labourers (hourly)	.....	842	1,089
TOTALS	12,754	12,503	12,814

* These figures are now included in items 2, 3 and 4 above.

By occupation the employees are grouped as follows:

	1963-64	1962-63	1961-62
Clerical and stenographers	2,020	2,010	1,979
Graduate engineers	374	375	386
Engineer's assistants	2,300	2,287	2,389
Draftsmen	607	633	632
* Skilled and unskilled labour	.....	5,870	6,184
Others	1,312	1,328	1,244
Equipment operators	2,748	.....	.....
Automotive mechanics and foremen	457	.....	.....
Skilled labour	640	.....	.....
Unskilled labour	2,296	.....	.....
TOTALS	12,754	12,503	12,814

* This figure is now divided into the last four classifications.

During the year 31,407 personnel transactions were carried out by the Personnel Branch as follows:

* New appointments	6,596
Terminations	6,345
= Salary and other changes	18,466

* This figure includes 4,999 seasonal help and 762 summer students.
= This figure includes general salary revisions to certain classes among which were clerks, draftsmen and equipment operators.

Organization and Classification Section

This section is responsible for the administration, throughout the Department, of the classification and salary plan established by the Department of Civil Service. It is responsible for the development and administration of a similar departmental program governing the unclassified employees who are not subject to the Public Service Act.

It is also responsible for the program of appointments to the regular staff of probationary and unclassified employees.

The section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to individual employees where their problems are of such a nature that their supervisors are unable to assist them.

The regional representatives are also responsible for conducting safety inspections of premises and of field operations being carried out by Department employees.

The work initiated under the Ontario Civil Service Reclassification Program was carried on, with modifications, and the branch and regional personnel representatives continued to serve as the Department's job analysts providing advice and guidance to supervisors in the field of position specification writing. It was found necessary during the year, both as a result of audits carried out by the staff of the branch and as a result of organizational changes in the branches and districts, to re-write many position specifications and to re-draw a number of organization charts.

Similarly, the Civil Service Commission announced the establishment of many new classes, and salary revisions for established classes, and, as a result a very large number of positions had to be considered. The processing of the class and salary changes for the incumbents of these positions assumed the proportions of a major undertaking, particularly in view of the retroactive nature of the revisions, which necessitated the re-processing of all transactions, for the employees concerned, which were subsequent to the effective dates of the revisions.

Classification and salary revisions were processed for a large number of employees whose positions were assigned to the Highway Equipment Operator class series, and in the clerical class series. Similarly, revisions were processed for Secretarial, Stenographic and Typing class series, and for those employees engaged in the sign-painting trade.

Amongst these changes, a new class structure was established for positions in the Photogrammetry Section of the Department's Design Branch. This resulted from recommendations made following studies conducted by the Organization and Classification Section in conjunction with senior officials of the Design Branch.

Planning and Design Branch was reorganized during the year, resulting in the formation of two separate branches: Planning Branch, and Design Branch. This major organizational change necessitated the assignment of the new positions thus established to appropriate classifications.

The very close liaison by the section with branch heads and their staffs was continued, to ensure that any changes in staff numbers recommended by subordinate supervisors were considered to be essential to the proper operation of the Department.

Training Section

This section is responsible for establishing and maintaining training courses as required to maintain and improve the efficiency of Department operations.

Training courses were held at the Training School at Downsview during the fall and winter months when the seasonal reduction in the construction program enabled employees to attend.

The following branches conducted training courses during the period from April 1, 1963 to March 31, 1964.

Branch	Number of Courses	Number of Candidates Attending
Services	35	308
Planning	5	121
Design	9	98
Operations	14	351
Personnel	20	1,774
TOTALS	83	2,652

These courses provided instruction in a wide variety of Department activities, such as: construction surveying, design surveying, land surveying, drafting, estimating, inspection, automotive mechanics, safety, aerial photograph interpretation and administration. Sixty-five per cent of the candidates writing examinations in connection with these courses were successful.

In addition to courses, qualifying examinations were conducted by the following branches:

	Number of Examinations	Number of Candidates
Services	16	136
Design	2	33
Operations	7	274
TOTALS	25	443

The examinations were written by employees to qualify for promotion to Mechanic 2, Property Negotiators and Agents, Draftsman 1, Draftsman 2, Survey Technician 2, Rodman, District Accountant, Section Head, Supply Supervisor 1, Supply Supervisor 2, and Highway Inspection Assistant 2. Sixty-five per cent of the candidates were successful.

Five courses were conducted by the Materials and Research Section for inspectors from the municipalities of the Province. Two junior courses and senior soils, asphalt and concrete courses were held with a total of 137 municipal employees attending.

As in past years, the Services Branch's mobile training unit continued its program of mechanical training in the districts.

The Training Section is also responsible, under the direction of the Training Committee, for the Engineers-in-Training Program in which selected junior professional engineers undergo a systematic job rotation program to prepare them for future administrative positions by giving them a broad knowledge of all the Department's operations. The seventh program in which seven engineers participated was completed in March 1964 and the eighth program has been approved and is scheduled to commence in June 1964.

Sixty-two employees were authorized to attend specialized courses conducted by outside agencies. This type of training is approved when the courses pertain directly to the work the employee is performing and it is felt that the training received will benefit the Department. One hundred and twenty-five employees took St. John Ambulance courses in the fundamentals of first aid and qualified for certificates.

A total of 3,283 employees participated in the various training activities conducted from April 1, 1963 to March 31, 1964.

Departmental Council System

The Departmental Council convened for nine meetings in the period between April 1, 1963 and March 31, 1964. The Council held a two-day conference at which the chairmen of the Department's twenty-eight (28) Branch Councils attended. At this conference Government regulations, policies, salaries, etc., were reviewed and a general discussion was held.

The annual election of employee representative(s) to the Departmental and Branch Councils was conducted in accordance with regulations made under the Public Service Act. The Minister of Highways appointed his representatives to the Departmental and Branch Councils.

The active operation of the Branch Councils and the interest shown by both branch heads and employees made for a very successful year. Many varied and sound recommendations were considered and approved.

The Departmental and Branch Councils assisted in the campaigning for the United Appeal, Cancer Society, Canadian Red Cross Blood Clinic and Health Clinics.

Safety Section

The Safety Section, through the Director of Personnel, is responsible for the safety training of Department employees, with the aim of eliminating both motor vehicle and industrial accidents.

A total of approximately 1,900 employees attended courses of instruction held throughout the province. This figure includes employees attending training courses of various types held at the Department Training School at Downsview, who were given periods of instruction in safety training as a part of their course.

During this training, strong emphasis was placed on accident control for those employees occupying supervisory positions. Their responsibility, opportunity and authority to prevent accidents was stressed during entire one-day presentations. An appropriate film was shown.

Safety inspections were carried out by the Personnel Branch representatives, a total of 75 different departmental installations being inspected and reported upon.

The Annual Safe and Skilled Driving Competitions ("Roadeo") were run off in the districts, with the championship finals being held at Downsview. The Minister of Highways assisted in the presentation of trophies and medals to the winners.

Safe Driving Awards were again made to equipment operators. Approximately 1,490 medals were issued for presentation.

St. John Ambulance two-day courses in "Fundamentals of First Aid" were attended by approximately 125 employees.

The Safety Section produced Safety Pamphlet No. 4, "Backing Can Be Safe." In addition, approximately 3,000 pamphlets of "Correct Methods for Traffic Control" were issued. Safety posters and safety bulletins were issued on a monthly basis, together with other safety promotion material. Timely articles pertaining to safety were prepared for publication in the "D.H.O. News," the magazine published by the Department for its employees.

It is gratifying to be able to point out that once again there has been a reduction in frequency of accidents. Of special interest is the fact that fatalities from all work causes have been reduced from ten in 1960-61, five in 1961-62 and two in 1962-63 to one in 1963-64.

The following tables show the Department's accident experience for the current and previous year:

Industrial Accidents

	Fiscal Year 1962-63	Fiscal Year 1963-64
Total hours worked	25,990,992	25,556,884
Number of lost-time accidents	677	627
Days lost as result of accidents	28,700	24,195
Frequency rate (number of accidents per million hours worked)	26.05	24.53
Severity rate (days lost per million hours worked)	1,104.23	946.71
Industrial injury costs (factual)	$392,957.69	$385,071.05
Fiscal year 1963-64	$385,071.05	
Fiscal year 1962-63	$392,957.69	
Decrease of	$ 7,886.64	

Motor Vehicle Accidents

	Fiscal Year 1962-63	Fiscal Year 1963-64
(a) **Trucks**		
Responsible accidents	161	168
Miles travelled	33,586,496	34,332,195
Frequency rate per 100,000 miles of travel	0.48	0.49
(b) **Tractors and Graders, etc.**		
Responsible equipment accidents	27	39
Miles travelled	3,341,295	3,066,605
Frequency rate per 100,000 miles of travel	0.81	1.27
Total responsible accidents for both types of equipment	188	207

Health Centre

Operated and staffed by the provincial Department of Health, a large health centre is maintained at the Downsview headquarters.

The full-time staff includes one medical officer, 5 graduate nurses and one receptionist. The nurse in charge has, in addition, a certificate in Public Health.

The health centre also serves the Department of Transport's Downsview branch and the Ontario Water Resources' Research Division at Highway 401 and Islington Avenue, where no health services are available.

During the fiscal year 1963-64 a total of 17,818 health centre visits were recorded. X-rays of chest totalled 668 and 119 cardiograms were taken and interpreted.

Employees may request complete medical check-ups at intervals varying with the age groups, from every three years to annually. During the fiscal year, 288 such examinations were carried out. All health centre services are free.

A partial breakdown shows that non-occupational sickness totalled 6,459 and non-occupational accidents 1,129. Compared with these figures, the occupational sickness and accident figures were 14 and 845. Some 1,765 consultations were recorded, while 1,015 cases were referred to outside agencies.

Some of the more frequent types of non-occupational complaints included acute respiratory disorders, 1,902; ill-defined symptoms and conditions, 1,860; digestive disorders, 805; skin diseases, 522; disorders of nervous or sense organs, 538; menstrual disorders, 290.

In addition to its regular functions, the health centre administered 2,230 tetanus, polio and various types of immunizations. The immunization program is considered one of the most important features of the health service.

Cafeteria

J. Boddy, Manager

For the benefit of the employees, the department has maintained cafeteria services at the Downsview headquarters since 1956.

Operated by a firm of industrial caterers, a central cafeteria, an executive dining room, a candy counter and eight snack wagons offer full meals as well as snack-wagon service twice daily, in addition to take-out service for employees wishing to make use of the several lounges located throughout the various buildings. A motor truck equipped for serving hot meals, soups and snacks is maintained by the caterer for service to detached buildings. Children's Christmas parties and the annual roadeo are also catered to.

The staff consists of manager, two supervisors and 28 cooks, waitresses, store-room personnel, etc.

An estimated 180,000 meals are served annually — as many as 750 on peak days. Of coffee alone, some 700 gallons are dispensed weekly at the cafeteria and by the snack wagons.

A Cafeteria Committee of three members of Department of Highways staff provides liaison between employees and the caterer.

APPENDIX No. 1

DEPARTMENT EXPENDITURES ON KING'S HIGHWAYS, SECONDARY HIGHWAYS, TERTIARY ROADS, ACCESS ROADS, CONNECTING LINKS, DEVELOPMENT ROADS, ROADS IN UNINCORPORATED TOWNSHIPS, BY COUNTY AND DISTRICT

April 1, 1963 to March 31, 1964

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Brant:			
Highway 2	$ 105,238.74	$ 89,618.95	$ 194,857.69
" 5	1,042.62	19,321.12	20,363.74
" 24	50,405.04	41,056.85	91,461.89
" 24A	236.80	13,215.90	13,452.70
" 53	5,056.95	41,671.05	46,728.00
" 54	155,453.13	55,290.89	210,744.02
" 99	21,666.88	11,594.93	33,261.81
" 403	120,476.91	.....	120,476.91
Connecting Link:			
Town of Paris	74,126.31	185.62	74,311.93
Development Road:			
Cockshutt Road	511,740.97	.....	511,740.97
Lands and Buildings	400.00	.....	400.00
	$1,045,844.35	$ 271,955.31	$1,317,799.66
Bruce:			
Highway 4	$ 297,195.99	$ 55,869.21	$ 353,065.20
" 6	149,408.50	127,529.09	276,937.59
" 9	363,809.43	58,527.81	422,337.24
" 21	377,220.61	108,987.94	486,208.55
" 86	1,586.07	18,763.68	20,349.75
Miscellaneous Surveys	17.35	.....	17.35
Connecting Links:			
Town of Kincardine	.....	8,316.06	8,316.06
Village of Lucknow	15,502.27	909.11	16,411.38
Village of Mildmay	.....	1,093.02	1,093.02
Town of Port Elgin	.....	1,736.57	1,736.57
Village of Teeswater	.....	1,011.11	1,011.11
Town of Walkerton	29,727.71	1,883.22	31,610.93
Town of Wiarton	.....	1,612.02	1,612.02
Development Roads:			
Hanover–Chesley	95,545.37	.....	95,545.37
County Road No. 3 (part)	29,583.64	.....	29,583.64
Lands and Buildings	8,107.90	300.00	8,407.90
	$1,367,704.84	$ 386,538.84	$1,754,243.68
Carleton:			
Highway 7	$ 22,380.95	$ 38,503.53	$ 60,884.48
" 15	392.93	17,541.09	17,934.02
" 16	51,094.42	58,973.74	110,068.16
" 17	683,827.29	303,430.27	987,257.56
" 29	18,391.32	6,226.07	24,617.39
" 31	9,001.31	67,038.59	76,039.90
" 44	12,413.15	14,389.78	26,802.93
Ottawa Queensway	5,329,371.80	913.81	5,330,285.61
MacDonald–Cartier Bridge	2,379,344.09	.....	2,379,344.09
Miscellaneous Surveys	48,562.37	.....	48,562.37
Connecting Link:			
City of Ottawa	182,590.67	.....	182,590.67
Development Roads:			
Nepean Swamp Road	Cr. 86.60	.....	Cr. 86.60
Burrett's Rapids–County Road No. 26	66,914.02	.....	66,914.02
Malwood–County Road No. 20	5,785.84	.....	5,785.84

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Carleton (Cont'd):			
Fitzroy Station Road	$ 122,737.02	$	$ 122,737.02
Panmure–Highway 44	140,548.80	.....	140,548.80
River Road	8,273.28	.....	8,273.28
County Road No. 47	26,056.09	.....	26,056.09
Dwyer Hill Road	9,853.86	.....	9,853.86
Lands and Buildings	.....	1,813.42	1,813.42
	$9,117,452.61	$ 508,830.30	$9,626,282.91
Dufferin:			
Highway 9	$ 13,220.21	$ 55,078.81	$ 68,299.02
" 10	24,238.00	66,798.23	91,036.23
" 24	1,433.83	27,584.61	29,018.44
" 89	9,901.67	36,337.21	46,238.88
" 104	980.72	5,491.53	6,472.25
" 136	7.30	1,466.95	1,474.25
Connecting Links:			
Town of Orangeville	63,456.89	4,418.94	67,875.83
Village of Shelburne	.....	651.95	651.95
Development Roads:			
Hornings Mills–Terra Nova (part)	75,875.09	.....	75,875.09
Hornings Mills Bridge	25,474.71	.....	25,474.71
County Road No. 3	305,102.33	.....	305,102.33
	$ 519,690.75	$ 197,828.23	$ 717,518.98
Elgin:			
Highway 3	$1,275,615.79	$ 140,289.48	$1,415,905.27
" 4	8,293.36	30,172.62	38,465.98
" 19	26,790.50	24,243.89	51,034.39
" 73	217,151.62	16,842.38	233,994.00
" 74	29,221.80	13,056.58	42,278.38
" 76	29,925.37	19,061.29	48,986.66
" 401	1,926,160.89	52,008.23	1,978,169.12
Miscellaneous Surveys	66.85	.....	66.85
Sidewalk:			
Village of Straffordville	315.50	.....	315.50
Connecting Links:			
Town of Aylmer	.....	7,834.71	7,834.71
Village of Port Burwell	.....	2,027.55	2,027.55
Development Roads:			
County Road No. 39 (part)	845.71	.....	845.71
County Road No. 36 (part)	189,182.40	.....	189,182.40
Lands and Buildings	17,689.42	351.00	18,040.42
	$3,721,259.21	$ 305,887.73	$4,027,146.94
Essex:			
Highway 2	$ 12,235.46	$ 51,514.89	$ 63,750.35
" 3	11,331.29	90,568.03	101,899.32
" 3B	177,865.95	13,455.33	191,321.28
" 18	904,836.06	51,572.82	956.408.88
" 18A	9,086.50	13,106.17	22,192.67
" 39	140,795.39	24,400.19	165,195.58
" 77	30,743.56	21,907.63	52,651.19
" 98	75,512.18	49,054.75	124,566.93
" 107	1,397.84	3,738.31	5,136.15
" 114	67.64	834.21	901.85
" 401	11,759.84	80,189.14	91,948.98
Miscellaneous Surveys	862.04	.....	862.04
Connecting Links:			
Town of Amherstburg	.....	601.68	601.68
Village of Belle River	.....	940.90	940.90
Town of Essex	.....	430.93	430.93
Town of Harrow	.....	382.96	382.96
Town of Kingsville	Cr. 9.71	1,233.44	1,223.73

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Essex (Cont'd):			
Town of Leamington	$ 59,085.84	$ 453.85	$ 59,539.69
Town of Ojibway	.....	471.05	471.05
City of Windsor	6,298.59	2.15	6,300.74
Lands and Buildings	5,429.80	665.31	6,095.11
	$1,447,298.27	$ 405,523.74	$1,852,822.01
Frontenac:			
Highway 2	$ 88,497.30	$ 56,777.40	$ 145,274.70
" 7	234,432.31	57,196.67	291,628.98
" 15	5,891.10	59,374.09	65,265.19
" 33	20,896.77	11,048.23	31,945.00
" 38	130,990.28	96,058.45	227,048.73
" 41	6,605.87	34,818.56	41,424.43
" 95	1,759.94	20,486.37	22,246.31
" 96	41,754.80	56,008.39	97,763.19
" 401	19,308.01	109,289.12	128,597.13
Ferries	1,573.37	.....	1,573.37
Sec. Hwy. 506	93,419.02	44,121.02	137,540.04
" " 509	70,237.02	23,450.54	93,687.56
Access Road:			
Green Lake–Bedford Township	3,521.15	.....	3,521.15
Miscellaneous Surveys	8,160.98	.....	8,160.98
Sidewalk:			
Village of Erinville	344.56	.....	344.56
Connecting Link:			
City of Kingston	27,551.07	.....	27,551.07
Development Roads:			
Perth Road (part)	212,198.32	.....	212,198.32
Mass Road–County Road No. 8 (part)	23,309.83	.....	23,309.83
McKnight Road	37,060.70	.....	37,060.70
Snow Road Ompah	123,077.18	.....	123,077.18
Plevna Ompah Road	16,029.55	.....	16,029.55
Parham–Wagarville	6,308.06	.....	6,308.06
Wilson–Vennacher Road (part)	9,798.34	.....	9,798.34
Bellrock Road (County Road No. 7)	384,243.98	.....	384,243.98
Crow Lake Easterly	106,355.41	.....	106,355.41
Otter Lake Northerly (part)	41,719.34	.....	41,719.34
County Road No. 16A (part)	3,927.28	.....	3,927.28
Kennebec Township Road (part)	4,706.77	.....	4,706.77
Lands and Buildings	11,343.50	649.49	11,992.99
	$1,735,021.81	$ 569,278.33	$2,304,300.14
Grey:			
Highway 4	$ 51,718.87	$ 146,282.91	$ 198,001.78
" 6	553,971.36	133,325.97	687,297.33
" 10	14,466.30	69,103.15	83,569.45
" 24	88.07	7,687.70	7,775.77
" 26	18,529.35	85,498.62	104,027.97
" 89	8,555.86	25,774.76	34,330.62
Miscellaneous Surveys	515.23	.....	515.23
Connecting Links:			
Village of Chatsworth	.....	427.31	427.31
Town of Durham	969.91	2,060.91	3,030.82
Village of Flesherton	.....	512.17	512.17
Town of Hanover	.....	1,177.18	1,177.18
Village of Markdale	.....	612.13	612.13
Town of Meaford	5,046.56	1,900.94	6,947.50
City of Owen Sound	7,574.45	.....	7,574.45
Town of Thornbury	.....	933.83	933.83
Development Roads:			
Flesherton–Singhampton Road	121,755.33	.....	121,755.33
Hanover–Chesley Road–Ontario Hospital	95,545.38	.....	95,545.38
County Roads No. 18 and No. 5 (part)	1,913.21	.....	1,913.21
	35,566.13	.....	35,566.13

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Grey (Cont'd):			
Lands and Buildings	$ 1,263.78	$ 1,898.34	$ 3,162.12
	$ 917,479.79	$ 477,195.92	$1,394,675.71
Haldimand:			
Highway 3	$ 245,007.85	$ 148,369.53	$ 393,377.38
" 6	742,182.51	51,215.94	793,398.45
" 54	5,872.29	60,970.88	66,843.17
" 56	3,287.38	15,297.86	18,585.24
Special Agreement:			
Jct. Hwy. 6 to Brantford Township	12,942.67	.....	12,942.67
Miscellaneous Surveys	6.60	.....	6.60
Connecting Links:			
Town of Caledonia	314,544.24	1,519.00	316,063.24
Village of Cayuga	.....	168.11	168.11
Town of Dunnville	.....	791.84	791.84
Village of Hagersville	.....	453.57	453.57
Village of Jarvis	.....	426.94	426.94
Development Roads:			
County Road No. 2 (part)	1,434.45	.....	1,434.45
Old Indian Line	111,936.24	.....	111,936.24
	$1,437,214.23	$ 279,213.67	$1,716,427.90
Halton:			
Highway 2	$ 213,942.41	$ 96,178.72	$ 310,121.13
" 5	212,361.40	60,611.27	272,972.67
" 6	89,073.22	4,399.80	93,473.02
" 7	23,131.37	33,760.47	56,891.84
" 20	77,444.42	.....	77,444.42
" 25	83,851.98	65,165.11	149,017.09
" 122	1,415.24	104,667.50	106,082.74
" 401	238,443.84	116,287.35	354,731.19
" 403	1,894,177.56	35,443.41	1,929,620.97
Queen Elizabeth Way	170,130.29	205,594.53	375,724.82
Miscellaneous Surveys	970.96	.....	970.96
Connecting Links:			
Town of Acton	.....	1,150.59	1,150.59
Town of Burlington	79,285.15	550.85	79,836.00
Town of Georgetown	.....	1,324.59	1,324.59
Town of Milton	35,092.00	771.92	35,863.92
Town of Oakville	7,201.80	.....	7,201.80
Development Road:			
Concession 1/11 Road	36,326.38	.....	36,326.38
Lands and Buildings	4,315.03	48.40	4,363.43
	$3,167,163.05	$ 725,954.51	$3,893,117.56
Hastings:			
Highway 2	$ 396,553.10	$ 62,407.99	$ 458,961.09
" 7	447,125.38	56,581.53	503,706.91
" 14	556,633.74	102,554.84	659,188.58
" 28	5,425.58	23,838.46	29,264.04
" 33	20,536.70	22,912.27	43,448.97
" 37	20,416.75	68,272.97	88,689.72
" 41	21,012.67	3,430.44	24,443.11
" 62	359,170.02	155,481.81	514,651.83
" 121	914.85	3,113.50	4,028.35
" 127	8,209.84	12,530.11	20,739.95
" 401	694,846.48	80,835.28	775,681.76
Sec. Hwy. 500	259,795.26	45,232.55	305,027.81
" " 502	2,475.19	5,833.10	8,308.29
" " 517	1,833.31	11,806.10	13,639.41
" " 620	139,705.43	33,981.55	173,686.98
Access Road:			
Watt Lake Road	12,519.47	.....	12,519.47

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Hastings (Cont'd):			
Sidewalk:			
Village of Maynooth	$ 642.00	$	$ 642.00
Connecting Links:			
City of Belleville	64,642.24	.....	64,642.24
Town of Desoronto	.....	255.65	255.65
Village of Madoc	71,294.63	2,141.39	73,436.02
Village of Marmora	53,757.03	481.37	54,238.40
Village of Stirling	40,168.09	238.05	40,406.14
Town of Trenton	663.46	.....	663.46
Village of Tweed	.....	311.71	311.71
Development Roads:			
Ridge Road	7,835.39	.....	7,835.39
Bannockburn–Cooper Road	1,807.74	.....	1,807.74
Sulphide–Tweed	89,007.12	.....	89,007.12
Side Road 15/16	56,382.16	.....	56,382.16
Madoc Boundary West Con. vi	1,826.35	.....	1,826.35
County Road No. 1 (part)	422,765.14	.....	422,765.14
Concession iii/iv Road (part)	.....	20,018.68	20,018.68
Concession iv/v Road (part)	16,869.45	.....	16,869.45
Musclow–Greenview Road (part)	98,224.84	.....	98,224.84
Provost Corners Northerly	87,972.31	.....	87,972.31
Bowens Corners Southerly	76,989.86	.....	76,989.86
Beaver Creek Bridge	18,036.78	.....	18,036.78
Weslemkoon Road (part)	9,743.82	.....	9,743.82
County Rd. No. 4 Frankford–Hwy. 401	1,890.33	.....	1,890.33
Balsam Lake–Jones Boundary	13,161.70	.....	13,161.70
Lands and Buildings	16,189.10	3,072.31	19,261.41
	$4,097,043.31	$ 715,331.66	$4,812,374.97
Huron:			
Highway 4	$ 692,402.05	$ 94,681.78	$ 787,083.83
" 8	2,629.00	59,124.60	61,753.60
" 9	1,136.10	.....	1,136.10
" 21	72,261.54	113,214.06	185,475.60
" 23	284.72	8,956.03	9,240.75
" 81	6,251.44	16,857.23	23,108.67
" 83	18,760.69	48,839.61	67,600.30
" 84	419.30	13,892.74	14,312.04
" 86	125,699.00	53,151.24	178,850.24
" 87	926.20	28,384.75	29,310.95
Miscellaneous Surveys	392.11	.....	392.11
Connecting Links:			
Town of Clinton	.....	2,586.09	2,586.09
Town of Exeter	.....	1,664.51	1,664.51
Town of Goderich	.....	629.35	629.35
Town of Seaforth	178,067.85	634.01	178,701.86
Town of Wingham	.....	2,296.20	2,296.20
Development Roads:			
Brussels–Highway 86	172,299.91	.....	172,299.91
Seaforth–Brussels	386,830.90	.....	386,830.90
Stephen–McGillivary Townline	800.00	.....	800.00
Lands and Buildings	23,990.89	1,370.02	25,360.91
	$1,683,151.70	$ 446,282.22	$2,129,433.92
Kent:			
Highway 2	$ 16,893.68	$ 86,773.69	$ 103,667.37
" 3	1,001,363.36	75,926.17	1,077,289.53
" 21	885.20	31,881.67	32,766.87
" 40	14,094.69	38,845.67	52,940.36
" 78	402.47	10,503.36	10,905.83
" 79	2,339.35	4,850.28	7,189.63
" 98	4,708.13	28,223.75	32,931.88
" 401	3,243,978.50	34,398.24	3,278,376.74
Miscellaneous Surveys	862.04	.....	862.04

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Kent (Cont'd):			
Connecting Links:			
Town of Blenheim	$ 43,137.42	$ 924.16	$ 44,061.58
Town of Bothwell	4,401.49	453.51	4,855.00
City of Chatham	17,280.84	.....	17,280.84
Town of Dresden	.....	415.52	415.52
Town of Ridgetown	.....	552.45	552.45
Village of Thamesville	.....	590.92	590.92
Town of Tilbury	.....	223.14	223.14
Town of Wallaceburg	4,074.43	2,446.77	6,521.20
Village of Wheatley	.....	259.58	259.58
Development Roads:			
Paincourt Easterly	198.66	.....	198.66
County Road No. 1 (part)	12,000.00	.....	12,000.00
Lands and Buildings	57,073.87	4,079.79	61,153.66
	$4,423,694.13	$ 321,348.67	$4,745,042.80
Lambton:			
Highway 7	$ 638,178.57	$ 75,658.09	$ 713,836.66
" 21	473,722.02	65,352.63	539,074.65
" 22	23.64	1,842.98	1,866.62
" 40	18,229.20	34,718.40	52,947.60
" 40A	35,438.64	20,281.19	55,719.83
" 79	3,805.40	50,571.13	54,376.53
" 80	4,219.13	22,508.67	26,727.80
" 81	139,190.25	.....	139,190.25
" 82	768.48	6,567.17	7,335.65
" 402	344,987.18	38,300.50	383,287.68
Miscellaneous Surveys	1,857.62	.....	1,857.62
Connecting Links:			
Village of Alvinston	943.50	.....	943.50
Town of Forest	.....	648.68	648.68
Village of Thedford	.....	751.40	751.40
Village of Watford	16,116.35	1,032.89	17,149.24
Village of Wyoming	.....	793.04	793.04
Development Roads:			
Alvinston-Courtright	296,066.47	.....	296,066.47
Highway 402–County Road No. 4	2,731.60	.....	2,731.60
Hwy. 7 (Arkona)–Middlesex Cty. Line	29,413.77	.....	29,413.77
Lands and Buildings	27,043.58	1,718.81	28,762.39
Weigh Scales	593.13	.....	593.13
	$2,033,328.53	$ 320,745.58	$2,354,074.11
Lanark:			
Highway 7	$ 68,845.89	$ 277,066.55	$ 345,912.44
" 15	14,136.85	34,326.22	48,463.07
" 29	872,929.71	18,133.90	891,063.61
" 43	608,782.04	37,709.82	646,491.86
" 44	.....	3,375.71	3,375.71
Sec. Hwy. 511	3,135.01	17,760.72	20,895.73
Miscellaneous Surveys	1,191.47	.....	1,191.47
Connecting Links:			
Town of Almonte	94,175.65	1,015.36	95,191.01
Town of Carleton Place	Cr. 1,151.86	.....	Cr. 1,151.86
Development Roads:			
French Line Road	.....	8,218.65	8,218.65
Lanark–Elphin Road	32,116.71	.....	32,116.71
Fallbrook Westerly	16,868.32	.....	16,868.32
Brightside–Hopetown Road	93,177.26	.....	93,177.26
Innisville Easterly Road	45,456.45	.....	45,456.45
Second Line Road	20,094.14	.....	20,094.14
County Road No. 15, Pakenham–Waba	22,435.64	.....	22,435.64
Lands and Buildings	9,770.84	1,315.55	11,086.39
	$1,901,964.12	$ 398,922.48	$2,300,886.60

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Leeds and Grenville:			
Highway 2	$ 40,184.00	$ 141,700.52	$ 181,884.52
" 15	12,741.05	76,030.43	88,771.48
" 16	4,241.86	61,996.16	66,238.02
" 29	51,243.88	44,077.80	95,321.68
" 32	150.96	35,303.28	35,454.24
" 42	267,267.69	68,990.68	336,258.37
" 43	1,929.34	29,514.27	31,443.61
" 137	85.48	5,770.91	5,856.39
" 401	489,728.27	183,073.55	672,801.82
Special Agreement:			
County Rd. No. 15, North of Maitland	42,920.39	.....	42,920.39
Sidewalks:			
City of Brockville	1,538.63	.....	1,538.63
Town of Spencerville	890.50	.....	890.50
Connecting Links:			
Village of Athens	.....	302.53	302.53
City of Brockville	7,763.96	.....	7,763.96
Village of Kemptville	7,637.68	45.99	7,683.67
Village of Merrickville	.....	379.23	379.23
Town of Prescott	3,991.66	.....	3,991.66
Village of Westport	.....	203.40	203.40
Development Roads:			
Houghton Bay Road	10,884.69	.....	10,884.69
Escott-Rockport Road	9,066.94	.....	9,066.94
Westport–Bedford Mills County Road No. 11 (part)	148.78	.....	148.78
Lilly's Corners–Lyndhurst	1,356.34	.....	1,356.34
Warburton–Long Point	98,529.50	.....	98,529.50
County Road No. 16 (part)	36,459.65	.....	36,459.65
Domville Easterly	20,691.51	.....	20,691.51
Highway 16-County Road No. 18	96,304.72	.....	96,304.72
Yonge Boundary-Highway 29	74,418.06	.....	74,418.06
Township Bdry. Westerly-Oakleaf	1,476.00	.....	1,476.00
County Road No. 5B Westerly–Township Boundary	2,451.50	.....	2,451.50
Sideroad 6/7	3,631.04	.....	3,631.04
Lands and Buildings	26,742.86	145.11	26,887.97
Weigh Scales	1,697.24	1,047.20	2,744.44
	$1,316,174.18	$ 648,581.06	$1,964,755.24
Lennox and Addington:			
Highway 2	$ 95,864.62	$ 50,783.42	$ 146,648.04
" 7	195,509.21	23,562.05	219,071.26
" 33	17,753.97	77,147.71	94,901.68
" 41	65,277.50	112,675.70	177,953.20
" 133	28,318.70	4,577.19	32,895.89
" 401	1,651,898.07	36,777.26	1,688,675.33
Ferries	1,346.07	82,488.58	83,834.65
Sec. Hwy. 500	5,648.58	13,150.84	18,799.42
" " 502	303.84	12,682.52	12,986.36
Miscellaneous Surveys	26.59	.....	26.59
Connecting Links:			
Village of Bath	218,626.55	178.04	218,804.59
Town of Napanee	.....	429.92	429.92
Development Roads:			
Centreville–Enterprises	28,771.42	.....	28,771.42
Hay Bay Road	23,185.02	.....	23,185.02
Wilson–Vennacher Road (part)	13,475.88	.....	13,475.88
County Road No. 4 (part)	34,181.78	.....	34,181.78
County Road No. 5 (part)	10,768.69	.....	10,768.69
Centreville–Highway 401	24,284.28	.....	24,284.28
Flinton-Hastings Boundary	5,444.29	.....	5,444.29
Dorland–Sir John A. Macdonald's Monument	1,625.35	.....	1,625.35
Concession v-vi Road (part)	2,345.15	.....	2,345.15

COUNTY	Construction	Maintenance	Total
Lennox and Addington (Cont'd):			
Lands and Buildings	$ 3,446.03	$ 2,378.12	$ 5,824.15
	$2,428,101.59	$ 416,831.35	$2,844,932.94
Lincoln:			
Highway 8	$ 577,468.95	$ 92,801.38	$ 670,270.33
" 8A	304.72	7,652.73	7,957.45
" 20	38,468.47	54,428.79	92,897.26
" 57	9,431.72	6,344.50	15,776.22
" 58	6,280.11	298.31	6,578.42
" 405	1,234,212.34	17,043.80	1,251,256.14
" 406	1,807,186.25	.....	1,807,186.25
Queen Elizabeth Way	4,435,763.27	197,788.02	4,633,551.29
Miscellaneous Surveys	573.53	.....	573.53
Connecting Links:			
Village of Beamsville	.....	672.03	672.03
Town of Grimsby	.....	404.54	404.54
City of St. Catharines	309,750.89	36,562.00	346,312.89
Development Roads:			
Lincoln Welland	33,414.34	.....	33,414.34
St. David's Road (part)	1,607.24	.....	1,607.24
Lands and Buildings	8,604.51	.....	8,604.51
	$8,463,066.34	$ 413,996.10	$8,877,062.44
Middlesex:			
Highway 2	$ 27,092.88	$ 103,967.01	$ 131,059.89
" 4	865,283.49	72,119.96	937,403.45
" 7	27,232.25	102,926.20	130,158.45
" 22	2,805.16	44,282.65	47,087.81
" 23	5,537.31	16,958.07	22,495.38
" 73	1,280.56	16,484.81	17,765.37
" 74	49,191.81	11,034.56	60,226.37
" 76	12,043.55	3,714.38	15,757.93
" 80	1,590.41	15,520.11	17,110.52
" 81	23,472.98	104,177.88	127,650.86
" 126	1,287,290.76	7,291.25	1,294,582.01
" 135	13.17	5,636.42	5,649.59
" 401	617,200.22	132,467.70	749,667.92
Miscellaneous Surveys	9,223.64	.....	9,223.64
Sidewalk:			
Village of Melbourne	120.00	.....	120.00
Connecting Links:			
City of London	168,416.12	165.16	168,581.28
Village of Lucan	.....	1,307.35	1,307.35
Town of Parkhill	2,160.30	874.58	3,034.88
Town of Strathroy	3,539.32	640.48	4,179.80
Development Roads:			
Middlesex County Line–Highway 81	91,796.79	.....	91,796.79
Granton Northerly–Township Bdry	33,619.83	.....	33,619.83
Stephen–McGillivary Townline	800.00	.....	800.00
Lands and Buildings	9,512.13	.....	9,512.13
	$3,239,222.68	$ 639,568.57	$3,878,791.25
Norfolk:			
Highway 3	$ 537,693.21	$ 71,848.53	$ 609,541.74
" 6	13,452.73	20,677.56	34,130.29
" 19	174.94	6,134.84	6,309.78
" 24	394,107.94	77,620.27	471,728.21
" 59	146,398.62	77,985.57	224,384.19
Miscellaneous Surveys	3,279.98	.....	3,279.98
Connecting Links:			
Town of Delhi	.....	608.95	608.95
Town of Simcoe	141,068.98	1,202.52	142,271.50

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Norfolk (Cont'd):			
Development Roads:			
County Rd. No. 9, Hwy. 24 Southerly	$ 4,000.66	$	$ 4,000.66
Townline Road	23,317.12		23,317.12
Lands and Buildings	1,466.80	972.00	2,438.80
	$1,264,960.98	$ 257,050.24	$1,522,011.22
Northumberland and Durham:			
Highway 2	$ 28,499.87	$ 159,455.81	$ 187,955.68
" 7	1,203.41	1,114.34	2,317.75
" 7A	355,617.43	47,318.95	402,936.38
" 28	2,697.29	60,080.57	62,777.86
" 30	6,441.18	55,497.75	61,938.93
" 33	4,294.51	9,139.18	13,433.69
" 35	21,742.64	72,469.65	94,212.29
" 45	18,547.31	51,208.72	69,756.03
" 106	.....	6,250.52	6,250.52
" 115	3,667.86	67,473.91	71,141.77
" 401	187,069.86	405,624.76	592,694.62
Miscellaneous Surveys	250.84		250.84
Sidewalk:			
Village of Grafton	4,277.78		4,277.78
Connecting Links:			
Town of Bowmanville	.....	72.94	72.94
Village of Brighton	.....	468.92	468.92
Town of Campbellford	.....	201.97	201.97
Town of Cobourg	88,630.16	5,426.16	94,056.32
Village of Colborne	.....	456.17	456.17
Village of Hastings	8,351.18	352.12	8,703.30
Village of Newcastle	13,117.01	393.73	13,510.74
Town of Port Hope	.....	4,280.74	4,280.74
Town of Trenton	39,726.43	.....	39,726.43
Development Roads:			
Morganston–Cuffs Corners	5,864.46	.....	5,864.46
Concession ii Road	6,701.17	.....	6,701.17
County Rd. No. 18, Hwy. 401 Southerly	1,050.13	.....	1,050.13
Lots 12/13, Concession ii and iii	100,241.31	.....	100,241.31
Wooler Road	253,742.36	.....	253,742.36
Healey's Falls Road	20,293.97	.....	20,293.97
Roseneath Easterly	5,934.60	.....	5,934.60
Base Line Road	9,900.39	.....	9,900.39
Lots 6/7, Concession B, A and 1	13,466.17	.....	13,466.17
Lands and Buildings	8,237.35	84.00	8,321.35
	$1,209,566.67	$ 947,370.91	$2,156,937.58
Ontario:			
Highway 2	$ 336,771.90	$ 47,673.86	$ 384,445.76
" 7	418,911.50	120,263.54	539,175.04
" 7A	880.35	9,442.10	10,322.45
" 12	169,942.00	89,844.85	259,786.85
" 47	4,595.11	51,311.37	55,906.48
" 48	9,437.74	18,702.97	28,140.71
" 69	378.28	37,809.58	38,187.86
" 401	48,153.50	184,841.03	232,994.53
" 404	238.01	.....	238.01
Sec. Hwy. 503	3,275.33		3,275.33
Special Agreement:			
Victoria Street (Town of Whitby)	64,654.73	.....	64,654.73
Connecting Links:			
Village of Beaverton	.....	900.76	900.76
Village of Port Perry	264.59	354.96	619.55
Town of Uxbridge	3,567.32	1,744.70	5,312.02
Town of Whitby	.....	5,222.08	5,222.08
Development Roads:			
Manchester–Goodwood Road	45,614.10	.....	45,614.10

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Ontario (Cont'd):			
Thickson Road (part)	$ 250,214.77	$	$ 250,214.77
Lands and Buildings	3,017.33	394.74	3,412.07
	$1,359,916.56	$ 568,506.54	$1,928,423.10
Oxford:			
Highway 2	$ 37,309.19	$ 85,330.85	$ 122,640.04
" 3	31,123.89	4,714.31	35,838.20
" 7	9.50		9.50
" 19	176,776.98	67,525.82	244,302.80
" 53	7,694.50	11,827.04	19,521.54
" 59	12,841.86	113,952.62	126,794.48
" 97	86,946.85	50,501.33	137,448.18
" 401	254,619.01	234,920.26	489,539.27
" 403	726.46		726.46
Sidewalk:			
Village of Hickson	228.00		228.00
Connecting Links:			
Village of Tavistock		844.25	844.25
Town of Tillsonburg		34.27	34.27
City of Woodstock		18.00	18.00
Lands and Buildings	7,195.99	757.44	7,953.43
	$ 615,472.23	$ 570,426.19	$1,185,898.42
Peel:			
Highway 2	$ 158,124.77	$ 84,685.33	$ 242,810.10
" 5	915,631.89	61,540.02	977,171.91
" 7	17,976.75	47,613.26	65,590.01
" 9	3,723.51	34,785.27	38,508.78
" 10	763,541.42	126,569.54	890,110.96
" 24	10,152.21	7,599.93	17,752.14
" 50	722,976.07	68,981.42	791,957.49
" 122	2,778.41	50,608.61	53,387.02
" 136	35,167.01	24,739.86	59,906.87
" 401	14,948.60	115,819.97	130,768.57
" 403	29,114.39		29,114.39
Queen Elizabeth Way	98,729.57	114,303.27	213,032.84
Toronto International Airport Road	69,281.03		69,281.03
Miscellaneous Surveys	8,496.69		8,496.69
Sidewalk:			
Township of Toronto	1,711.80		1,711.80
Connecting Links:			
Town of Brampton		4,587.57	4,587.57
Village of Port Credit		4,553.45	4,553.45
Development Roads:			
Heart Lake Road	123,762.15		123,762.15
Twentieth Side Road	13,048.43		13,048.43
Lands and Buildings	54,980.84	408.09	55,388.93
	$3,044,145.54	$ 746,795.59	$3,790,941.13
Perth:			
Highway 7	$ 187,728.05	$ 72,870.16	$ 260,598.21
" 8	20,494.00	53,842.40	74,336.40
" 9	269.39		269.39
" 19	112,733.00	53,925.02	166,658.02
" 23	468,036.39	95,677.44	563,713.83
" 59	387.12	6,254.53	6,641.65
" 83	191.96	9,906.92	10,098.88
" 86	2,878.43	35,048.77	37,927.20
Miscellaneous Surveys	61.91		61.91
Connecting Links:			
Town of Kistowel	8,431.75	3,007.85	11,439.60
Village of Milverton		556.13	556.13
Town of Mitchell		3,696.85	3,696.85

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Perth (Cont'd):			
Town of Stratford	$ 181,598.06	$ 19.73	$ 181,617.79
Development Road:			
County Road No. 6–Highways 23–19	9,936.04		9,936.04
Lands and Buildings	5,976.20		5,976.20
	$ 998,722.30	$ 334,805.80	$1,333,528.10
Peterborough:			
Highway 7	$ 51,024.85	$ 113,973.49	$ 164,998.34
" 28	6,212.57	88,209.29	94,421.86
" 30	2,095.78	4,925.19	7,020.97
" 36	194,878.72	35,122.57	230,001.29
" 45	39,225.45	8,609.27	47,834.72
" 115	953.98	1,257.27	2,211.25
" 121	.....	3,489.19	3,489.19
Sec. Hwy. 503	.....	2,089.99	2,089.99
" " 504	14,495.89	29,510.53	44,006.42
" " 507	41,296.76	52,486.46	93,783.22
" " 620	139,158.02	27,603.84	166,761.86
" " 649	742.87	6,749.94	7,492.81
Miscellaneous Surveys	5,070.07	.....	5,070.07
Connecting Links:			
Village of Lakefield	.....	464.89	464.89
Village of Norwood	.....	245.52	245.52
Development Roads:			
Hastings–Keene	169,822.51	.....	169,822.51
Havelock–Rush Point	13,122.62	.....	13,122.62
Ninth Line Road	19,112.59	.....	19,112.59
Sixth Line Road	48,679.94	.....	48,679.94
Stoney Lake North Shore Road	11,463.75	.....	11,463.75
County Road No. 3–Mud Lake I.R.	1,434.65	.....	1,434.65
Lands and Buildings	6,418.68	1,903.36	8,322.04
	$ 765,209.70	$ 376,640.80	$1,141,850.50
Prescott and Russell:			
Highway 17	$ 49,163.32	$ 228,575.52	$ 277,738.84
" 34	3,327.19	18,349.60	21,676.79
Connecting Links:			
Town of Hawkesbury	Cr. 161.92	5,725.20	5,563.28
Town of Rockland		1,472.13	1,472.13
Village of Vankleek Hill		466.15	466.15
Development Roads:			
Rose Corners–Cambridge Boundary	62,971.35		62,971.35
Vars–Osgoode Township Boundary	57,771.07		57,771.07
County Road No. 13 (part)	166,085.32		166,085.32
Casselman Westerly Road	23,346.24		23,346.24
Casselman Easterly Road	73,179.25		73,179.25
Lands and Buildings	3,908.47	626.18	4,534.65
Weigh Scales	718.00	2,717.04	3,435.04
	$ 440,308.29	$ 257,931.82	$ 698,240.11
Prince Edward:			
Highway 14	$ 20,511.14	$ 26,746.63	$ 47,257.77
" 33	540,557.17	51,474.06	592,031.23
" 41	50,409.19	23,263.18	73,672.37
Ferries		82,488.58	82,488.58
Miscellaneous Surveys	5,358.34		5,358.34
Connecting Link:			
Town of Picton	3,082.18	356.40	3,438.58
Development Roads:			
Scoharie Road	40,118.33		40,118.33
County Road No. 15	19,529.75		19,529.75

COUNTY	Construction	Maintenance	Total
Prince Edward (Cont'd):			
Lands and Buildings	$ 1,390.84	$ 120.40	$ 1,511.24
	$ 680,956.94	$ 184,449.25	$ 865,406.19
Renfrew:			
Highway 17	$ 890,222.21	$ 305,593.26	$1,195,815.47
" 29	.....	1,088.78	1,088.78
" 41	326,546.77	92,451.83	418,998.60
" 60	866,738.19	78,733.22	945,471.41
" 62	497,428.75	51,252.01	548,680.76
" 132	17,956.04	21,708.49	39,664.53
Sec. Hwy. 500	23,103.71	20,505.17	43,608.88
" " 508	29,593.20	29,644.18	59,237.38
" " 511	.....	8,165.29	8,165.29
" " 512	16,322.06	72,133.21	88,455.27
" " 513	6,805.78	18,900.50	25,706.28
" " 515	107,720.20	28,788.16	136,508.36
" " 517	9,105.65	9,533.49	18,639.14
" " 521	22,459.41	36,479.92	58,939.33
" " 635	.....	3,627.73	3,627.73
Access Roads:			
Alice Township Line–Ignace Lake	718.10	.....	718.10
Black Donald Road	3,042.32	.....	3,042.32
Two Islands Lake–Griffith	Cr. 2,314.09	.....	Cr. 2,314.09
Miscellaneous Surveys	6,252.94	.....	6,252.94
Connecting Links:			
Town of Arnprior	132,337.72	126.23	132,463.95
Village of Eganville	.....	446.82	446.82
Town of Pembroke	176,483.47	17,327.07	193,810.54
Town of Renfrew	.....	2,991.64	2,991.64
Development Roads:			
Combermere–Rockingham	15,580.39	.....	15,580.39
McGarth–Clontarf	5,058.70	.....	5,058.70
Admaston–Bagot Townline	117,338.42	.....	117,338.42
Germanicus Road	3,371.28	.....	3,371.28
Highway 62–Locksley	62,539.28	.....	62,539.28
Wilno–Radcliffe Boundary	51,529.47	.....	51,529.47
Bulger's Corners–Fifth Line	829.33	.....	829.33
Cormac–Rochefort Road (part)	361.40	.....	361.40
River Road, County Road No. 3	212,155.05	.....	212,155.05
Harwood Lake–Palmer Rapids	14,237.17	.....	14,237.17
Alice–Petawawa Townline	7,646.72	.....	7,646.72
Gillies Mill Road	601.79	.....	601.79
Lands and Buildings	18,164.93	2,400.81	20,565.74
	$3,639,936.36	$ 801,897.81	$4,441,834.17
Simcoe:			
Highway 9	$ 6,055.32	$ 32,608.48	$ 38,663.80
" 11	684,080.94	228,852.54	912,933.48
" 12	245,925.60	85,783.99	331,709.59
" 24	5,089.03	31,704.76	36,793.79
" 26	105,369.30	95,477.54	200,846.84
" 27	58,201.06	168,083.51	226,284.57
" 88	311.87	14,288.63	14,600.50
" 89	15,325.57	48,630.36	63,955.93
" 90	478,405.50	30,389.03	508,794.53
" 91	28,904.86	26,944.02	55,848.88
" 92	968.68	22,600.17	23,568.85
" 93	1,097.47	40,669.42	41,766.89
" 103	15,945.91	9,564.36	25,510.27
" 120	6,269.84	1,003.07	7,272.91
" 400	163,434.51	267,018.21	430,452.72
Wasaga Beach By-pass	225.00	.....	225.00
Miscellaneous Surveys	1,108.92	.....	1,108.92

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Simcoe (Cont'd):			
Connecting Links:			
Town of Alliston	$ 5,230.28	$ 1,437.44	$ 6,667.72
City of Barrie	234,960.00	44.40	235,004.40
Town of Bradford	.....	5,743.23	5,743.23
Village of Coldwater	.....	144.90	144.90
Town of Collingwood	1,691.00	1,386.45	3,077.45
Village of Cookstown	.....	421.41	421.41
Village of Elmvale	.....	1,385.11	1,385.11
Town of Orillia	.....	9,390.25	9,390.25
Village of Port McNicoll	.....	128.72	128.72
Town of Stayner	.....	459.46	459.46
Village of Victoria Harbour	.....	206.68	206.68
Development Roads:			
Champlain Road	170,084.14	.....	170,084.14
Oro-Medonte Townline	52,348.25	.....	52,348.25
Fifteenth Side Road	8,821.45	.....	8,821.45
Essa–Innisfil Townline	107,938.51	.....	107,938.51
Sideroad 5/6	215,799.71	36.00	215,835.71
County Road No. 17 (part)	352,671.02	.....	352,671.02
Lands and Buildings	40,741.90	892.84	41,634.74
	$3,007,005.64	$1,125,294.98	$4,132,300.62
Stormont Dundas and Glengarry:			
Highway 2	Cr.$ 20,587.79	$ 135,609.05	$ 115,021.26
" 31	13,289.43	85,661.27	98,950.70
" 34	731.17	53,584.46	54,315.63
" 43	3,201.94	109,240.63	112,442.57
" 401	7,182,197.75	133,674.57	7,315,872.32
Sidewalk:			
Township of Charlottenburg	7,053.00	.....	7,053.00
Connecting Links:			
Town of Alexandria	.....	3,415.29	3,415.29
City of Cornwall	17,646.53	.....	17,646.53
Village of Winchester	.....	1,355.19	1,355.19
Development Roads:			
Concession vi/vii	7,290.76	.....	7,290.76
Concession iv/v	32,772.91	.....	32,772.91
County Road No. 21	117,442.18	.....	117,442.18
Between Lots 12/13, Concession ii–viii	77,553.92	.....	77,553.92
County Road No. 7 (part)	10,201.67	.....	10,201.67
Brinston Easterly Road	4,427.66	.....	4,427.66
Lands and Buildings	35,133.05	3,416.31	38,549.36
	$7,488,354.18	$ 525,956.77	$8,014,310.95
Victoria:			
Highway 7	$ 2,292.17	$ 90,703.77	$ 92,995.94
" 35	294,111.20	64,445.07	358,556.27
" 35A	641.38	2,914.96	3,556.34
" 36	2,397.86	34,380.80	36,778.66
" 46	26,390.10	62,575.09	88,965.19
" 48	1,872.38	5,429.61	7,301.99
" 121	33,724.12	37,364.11	71,088.23
Sec. Hwy. 503	102,647.05	90,778.80	193,425.85
" " 505	3,459.24	23,362.91	26,822.15
" " 649	769.76	7,004.28	7,774.04
Connecting Links:			
Village of Bobcaygeon	49,835.91	943.95	50,779.86
Village of Fenelon Falls	.....	650.53	650.53
Town of Lindsay	109,238.20	3,377.69	112,615.89
Village of Omemee	846.52	396.25	1,242.77
Development Road:			
Bobcaygeon–Fenelon Falls	12,493.42	.....	12,493.42

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Victoria (Cont'd):			
Lands and Buildings	$ 11,870.87	$ 905.75	$ 12,776.62
	$ 652,590.18	$ 425,233.57	$1,077,823.75
Waterloo:			
Highway 7	$ 7,775.89	$ 70,622.64	$ 78,398.53
" 8	627,235.19	20,769.76	648,004.95
" 24	18,469.71	12,490.13	30,959.84
" 24A	.....	13,349.83	13,349.83
" 85	17,086.54	17,078.51	34,165.05
" 86	71,436.90	36,064.76	107,501.66
" 97	13,987.49	24,629.90	38,617.39
" 401	219,274.44	76,940.37	296,214.81
Miscellaneous Surveys	2,176.75	.....	2,176.75
Connecting Links:			
Town of Elmira	.....	1,520.07	1,520.07
City of Galt	7,439.24	71.76	7,511.00
Town of Hespeler	32,040.49	1,154.48	33,194.97
Village of New Hamburg	.....	1,249.67	1,249.67
Town of Preston	.....	14,119.37	14,119.37
City of Waterloo	11,323.50	.....	11,323.50
Development Road:			
Former Highway 86 at West Montrose	22,005.47	.....	22,005.47
Lands and Buildings	2,384.97	.....	2,384.97
	$1,052,636.58	$ 290,061.25	$1,342,697.83
Welland:			
Highway 3	$ 102,949.14	$ 123,905.53	$ 226,854.67
" 3A	21,457.39	38,969.94	60,427.33
" 3C	1,225.02	26,142.80	27,367.82
" 8	13,889.43	9,520.93	23,410.36
" 20	17,845.15	41,842.38	59,687.53
" 57	34,247.56	12,896.07	47,143.63
" 58	110,496.14	52,372.87	162,869.01
" 405	158,156.35	3,463.47	161,619.82
" 406	28,198.16	.....	28,198.16
Queen Elizabeth Way	20,358.56	177,296.42	197,654.98
Miscellaneous Surveys	121,648.88	.....	121,648.88
Connecting Links:			
Town of Fort Erie	39,949.52	3,735.55	43,685.07
Town of Port Colborne	.....	1,660.93	1,660.93
Development Road:			
Lincoln-Welland	20,625.91	.....	20,625.91
Lands and Buildings	480.89	1,065.04	1,545.93
Weigh Scales	596.01	.....	596.01
	$ 692,124.11	$ 492,871.93	$1,184,996.04
Wellington:			
Highway 6	$ 613,119.53	$ 114,411.65	$ 727,531.18
" 7	11,490.70	33,661.47	45,152.17
" 9	14,063.33	64,583.31	78,646.64
" 23	2,451.22	4,793.75	7,244.97
" 24	10,683.00	45,587.85	56,270.85
" 25	4,508.08	19,237.50	23,745.58
" 86	56,619.01	38,365.06	94,984.07
" 87	1,814.44	10,663.92	12,478.36
" 89	32,014.16	53,738.00	85,752.16
" 401	32,968.35	73,558.76	106,527.11
Miscellaneous Surveys	2,497.48	.....	2,497.48
Connecting Links:			
Village of Arthur	107,004.00	1,775.91	108,779.91
Village of Clifford	.....	1,591.98	1,591.98
Village of Erin	.....	557.23	557.23
Town of Fergus	.....	609.88	609.88

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
Wellington (Cont'd):			
City of Guelph	$ 75,718.39	$ 15.80	$ 75,734.19
Town of Harriston	.....	4,551.61	4,551.61
Town of Mount Forest	.....	2,650.11	2,650.11
Town of Palmerston	6,655.82	755.47	7,411.29
Development Roads:			
County Road No. 65	94,068.01	.....	94,068.01
County Road No. 65, Erin Township	6,700.00	.....	6,700.00
County Road No. 58 (part)	6,700.00	.....	6,700.00
County Road No. 69 (part)	3,700.00	.....	3,700.00
Highway 6–Victoria Bridge	1,500.00	.....	1,500.00
Lands and Buildings	39,126.14	.....	39,126.14
	$1,123,401.66	$ 471,109.26	$1,594,510.92
Wentworth:			
Highway 2	$ 20,074.74	$ 41,870.74	$ 61,945.48
" 5	16,920.56	55,265.50	72,186.06
" 6	120,130.33	62,240.56	182,370.89
" 8	157,852.76	72,594.26	230,447.02
" 20	660,037.13	44,562.57	704,599.70
" 52	11,033.61	47,273.90	58,307.51
" 53	1,100.56	20,693.36	21,793.92
" 56	10,413.45	24,806.77	35,220.22
" 97	1,819.58	22,335.20	24,154.78
" 99	12,879.04	36,024.69	48,903.73
" 102	408,809.37	4,724.37	413,533.74
" 403	5,246,727.42	8,821.07	5,255,548.49
Queen Elizabeth Way	270,506.20	185,418.68	455,924.88
Miscellaneous Surveys	2,469.45	.....	2,469.45
Connecting Links:			
Town of Dundas	355,544.74	238.37	355,783.11
City of Hamilton	.....	241.31	241.31
Lands and Buildings	5,190.39	.....	5,190.39
	$7,301.509.33	$ 627,111.35	$7,928,620.68
York:			
Highway 2	$ 922.40	$ 2,900.17	$ 3,822.57
" 2A	5,136.69	1,264.86	6,401.55
" 5	1,756.32	4,522.05	6,278.37
" 7	1,541,529.65	135,090.01	1,676,619.66
" 9	15,837.28	10,883.96	26,721.24
" 11	287,647.53	159,341.92	446,989.45
" 27	150,714.50	167,331.10	318,045.60
" 47	10,167.50	26,844.46	37,011.96
" 48	482,933.15	206,318.65	689,251.80
" 50	20,319.39	13,533.53	33,852.92
" 117	.....	1,718.15	1,718.15
" 400	293,237.53	170,415.85	463,653.38
" 401	11,526,540.75	412,489.77	11,939,030.52
" 403	4,680.22	.....	4,680.22
" 404	190,685.34	.....	190,685.34
" 407	331,031.05	.....	331,031.05
Queen Elizabeth Way	6,375.46	94,997.48	101,372.94
Bloor Street (Toronto)	77,445.11	.....	77,445.11
Yonge Street (Toronto)	4,781.21	.....	4,781.21
Toronto International Airport Road	1,967,965.30	70.80	1,968,036.10
Miscellaneous Surveys	4,937.02	.....	4,937.02
Connecting Links:			
Town of Richmond Hill	695.35	4,942.71	5,638.06
Village of Stouffville	25.75	2,966.30	2,992.05
Development Road:			
County Road No. 31 (part)	18,387.04	.....	18,387.04
Lands and Buildings	245,201.06	309.63	245,510.69
	$17,188.952.60	$1,415,941.40	$18,604,894.00

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma:			
Highway 17	$ 898,641.54	$ 776,284.98	$1,674,926.52
" 101	662,098.93	4,396.20	666,495.13
" 108	62,106.95	54,890.92	116,997.87
" 129	42,038.78	197,518.60	239,557.38
Ferries	.....	109,575.99	109,575.99
Sec. Hwy. 538	.....	4,871.82	4,871.82
" " 546	24,224.10	60,533.04	84,757.14
" " 547	204,543.40	.....	204,543.40
" " 548	31,004.62	74,260.92	105,265.54
" " 550	75,487.71	46,130.87	121,618.58
" " 552	6,115.39	29,189.77	35,305.16
" " 553	17,643.37	34,345.29	51,988.66
" " 554	7,169.54	26,618.94	33,788.48
" " 555	.....	11,916.34	11,916.34
" " 556	20,040.82	65,601.86	85,642.68
" " 557	.....	23,619.38	23,619.38
" " 561	8,187.13	42,987.01	51,174.14
" " 563	132.47	10,126.81	10,259.28
" " 565	4,448.35	6,772.94	11,221.29
" " 631	73,792.23	88,540.91	162,333.14
" " 638	11,040.04	63,774.44	74,814.48
" " 639	134,561.28	4,583.61	139,144.89
Special Agreement:			
Hawk Junction Road	.....	945.35	945.35
Access Roads:			
Panel Mine Road	.....	5,790.53	5,790.53
Denison Mine Road	.....	4,539.12	4,539.12
Shamrock Mine Road	.....	25,763.22	25,763.22
Milliken Mine Road	.....	5,037.18	5,037.18
Algoma–Nordic Mine Road	.....	3,254.65	3,254.65
Missanabie and Dalton Road	234,491.11	.....	234,491.11
Scarf Township Road	2,892.07	.....	2,892.07
Flagg Lake Road	3,573.87	.....	3,573.87
Franklin Lake Road	Cr. 736.92	.....	Cr. 736.92
Miscellaneous Surveys	37,326.98	.....	37,326.98
Sidewalk:			
Township of Korah	4,717.71	.....	4,717.71
Connecting Links:			
City of Sault Ste. Marie	84,579.88	.....	84,579.88
Town of Thessalon	23,212.32	2,576.62	25,788.94
Unincorporated Townships:			
Aberdeen	1,825.56	2,106.98	3,932.54
Aweres	1,649.90	1,211.00	2,860.90
Bridgeland	.....	541.86	541.86
Cobden	.....	465.45	465.45
Fenwick	3,029.03	5,004.27	8,033.30
Fisher	.....	355.00	355.00
Galbraith	6,195.39	4,809.25	11,004.64
Gaudette	.....	320.62	320.62
Grassett	19.08	105.44	124.52
Havilland	.....	1,512.16	1,512.16
Herrick	.....	355.00	355.00
Hodgins	5,667.53	56.00	5,723.53
Kars	.....	2,161.04	2,161.04
Kirkwood	.....	541.86	541.86
Lewis	1,906.76	531.62	2,438.38
Montgomery	.....	641.58	641.58
Parkinson	.....	21.00	21.00
Patton	15,559.67	850.96	16,410.63
Plummer	6,722.14	3,718.66	10,440.80
Ranger Lake Area	5,303.70	5,129.03	10,432.73
Rose	.....	1,295.00	1,295.00
Shedden	.....	2,961.03	2,961.03
Shields	.....	320.62	320.62
Spragge	.....	15.75	15.75
Striker	.....	304.12	304.12

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Algoma (Cont'd):			
Township 29 Rge. 24	$	$ 6,246.83	$ 6,246.83
Township 130	1,146.28	38.99	1,185.27
Township 131	1,146.27	38.98	1,185.25
Vankoughnet	.....	520.95	520.95
Victoria	.....	3,485.47	3,485.47
Wells	2,107.47	28.00	2,135.47
Development Roads:			
Centre Line Road	23,419.40	.....	23,419.40
Old Garden River Road	8,367.43	.....	8,367.43
Dean Lake Bridge	30,066.82	.....	30,066.82
Point Des Chenes Park Road	406.20	.....	406.20
Lands and Buildings	37,512.45	4,943.65	42,456.10
Weigh Scales	8,694.60	.....	8,694.60
	$2,834,079.35	$1,835,085.48	$4,669,164.83
Cochrane:			
Highway 11	$1,172,070.75	$ 476,944.23	$1,649,014.98
" 67	293,101.00	38,025.66	331,126.66
" 101	302,603.68	156,046.09	458,649.77
Ferries	.....	34,830.80	34,830.80
Sec. Hwy. 544	1,110.48	.....	1,110.48
" " 572	110.75	6,343.23	6,453.98
" " 574	67,762.48	56,402.98	124,165.46
" " 575	.....	1,650.44	1,650.44
" " 576	27,213.58	3,820.31	31,033.89
" " 577	15,303.06	24,282.36	39,585.42
" " 578	36,523.40	25,272.37	61,795.77
" " 579	41,425.62	55,507.57	96,933.19
" " 581	258.22	8,085.69	8,343.91
" " 583	166,882.01	104,064.72	270,946.73
" " 610	949.42	23,480.32	24,429.74
" " 626	.....	20,401.25	20,401.25
" " 629	.....	13,011.73	13,011.73
" " 631	1,523.07	8,835.65	10,358.72
" " 636	30,554.15	13,628.44	44,182.59
" " 652	1,208.13	.....	1,208.13
" " 653	30,395.12	.....	30,395.12
Access Roads:			
Kam-Kotia Mine Road	.....	15,524.29	15,524.29
McCowan Township	658.11	.....	658.11
Miscellaneous Surveys	955.40	.....	955.40
Connecting Links:			
Town of Cochrane	.....	5,186.74	5,186.74
Town of Hearst	.....	2,208.41	2,208.41
Town of Iroquois Falls	144,539.41	668.46	145,207.87
Town of Matheson	.....	375.22	375.22
Town of Timmins	3,270.88	3,044.92	6,315.80
Township of Tisdale	74,791.03	.....	74,791.03
Unincorporated Townships:			
Evelyn	.....	940.25	940.25
German	.....	1,519.48	1,519.48
Godfrey	.....	225.39	225.39
Jamieson	.....	225.39	225.39
Macklem	.....	610.30	610.30
Matheson	.....	1,552.73	1,552.73
Munro	.....	44.62	44.62
McCann	.....	922.79	922.79
Ogden	.....	905.00	905.00
Robb	.....	225.39	225.39
Shaw	.....	1,732.90	1,732.90
Sheralton		610.30	610.30
Barker	.....	123.49	123.49
Brower	.....	2,785.64	2,785.64
Calder	.....	3,848.35	3,848.35
Casgrain	10,955.62	3,219.42	14,175.04

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Cochrane (Cont'd):			
Clute	$	$ 6,180.15	$ 6,180.15
Colquhoun	.....	97.75	97.75
Devitt	.....	5,402.54	5,402.54
Eilber	.....	4,922.35	4,922.35
Fournier	.....	3,681.17	3,681.17
Fox	.....	2,210.15	2,210.15
Hanlan	13,153.35	3,345.37	16,498.72
Idington	6,136.58	1,482.06	7,618.64
Kendal	10,935.35	12,740.72	23,676.07
Kennedy	.....	2,328.86	2,328.86
Lamarche	346.40	5,028.80	5,375.20
Lowther	.....	3,857.37	3,857.37
McCrea	3,235.78	2,109.05	5,344.83
Newmarket	.....	1,692.38	1,692.38
O'Brien	2,238.00	4,778.54	7,016.54
Owens	11,297.20	5,085.24	16,382.44
Pyne	.....	1,853.56	1,853.56
Way	.....	9,356.97	9,356.97
Williamson	4,116.79	1,744.70	5,861.49
Development Roads:			
Victoria Road	19,282.44	.....	19,282.44
Genier Road	.....	2,496.00	2,496.00
Back Road	144,303.74	.....	144,303.74
Lands and Buildings	42,296.13	7,516.03	49,812.16
Weigh Scales	1,059.73	.....	1,059.73
	$2,682,566.86	$1,205,043.08	$3,887,609.94
Haliburton:			
Highway 28	$ 3,887.71	$ 17,425.19	$ 21,312.90
" 35	26,599.77	94,552.39	121,152.16
" 60	605.33	11,146.28	11,751.61
" 121	157,200.45	68,468.06	225,668.51
Sec. Hwy. 500	.....	2,338.09	2,338.09
" " 503	54,240.40	31,812.00	86,052.40
" " 507	12,986.68	12,115.03	25,101.71
" " 519	9,330.29	66,171.29	75,501.58
" " 530	121,603.35	24,764.72	146,368.07
" " 648	551.67	37,288.19	37,839.86
Access Road:			
Hindon Township Road	Cr. 5,257.04	.....	Cr. 5,257.04
Development Roads:			
Sec. Hwy. 503–Hwy. 121 and Sec. Hwy. 519	169,026.81	.....	169,026.81
Minden Bay Road	56,328.41	.....	56,328.41
Carnarvon–Quinn's Corners	25,197.33	.....	25,197.33
	$ 632,301.16	$ 366,081.24	$ 998,382.40
Kenora:			
Highway 17	$2,234,150.22	$ 274,561.62	$2,508,711.84
" 71	25,918.82	69,139.94	95,058.76
" 72	33,193.16	78,286.99	111,480.15
" 105	1,422,129.97	153,049.92	1,575,179.89
" 116	64,369.93	5,811.71	70,181.64
" 119	.....	13,767.26	13,767.26
" 125	143.84	8,668.84	8,812.68
" 128	6,161.43	26,733.16	32,894.59
Sec. Hwy. 594	3,443.61	20,231.45	23,675.06
" " 596	4,327.90	64,549.86	68,877.76
" " 598	1,066.25	7,034.40	8,100.65
" " 599	16,282.21	29,691.75	45,973.96
" " 601	27,251.98	21,310.89	48,562.87
" " 603	.....	983.11	983.11
" " 604	23,491.04	14,124.56	37,615.60
" " 605	.....	5,727.30	5,727.30

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Kenora (Cont'd):			
Sec. Hwy. 609	$ 432.38	$ 5,525.74	$ 5,958.12
" " 615	.....	8,131.52	8,131.52
" " 618	1,831.12	9,235.19	11,066.31
" " 641	.....	24,128.98	24,128.98
" " 642	195.38	4,487.82	4,683.20
" " 646	2,361.05	2,843.06	5,204.11
" " 647	.....	3,317.46	3,317.46
Tertiary Road 804	385.99	4,542.35	4,928.34
Access Roads:			
Savant Lake South–Sturgeon River	Cr. 3,579.48	Cr. 2,582.02	Cr. 6,161.50
Pickle Crow Northerly	400.00	.....	400.00
Temple Township	15,912.70	.....	15,912.70
Industrial Road:			
Ignace–Valora	20,000.00	7,419.31	27,419.31
Miscellaneous Surveys	2,156.28	.....	2,156.28
Connecting Link:			
Town of Kenora	.....	636.23	636.23
Unincorporated Townships:			
Aubrey East	.....	2,965.32	2,965.32
Britton	.....	3,893.53	3,893.53
Colenso	.....	110.05	110.05
Devonshire	.....	103.31	103.31
Drayton	4,357.59	214.49	4,572.08
Drayton Reserve	.....	1,996.10	1,996.10
Eton	.....	3,524.97	3,524.97
Forgie and Boys	.....	873.68	873.68
Gidley	.....	107.35	107.35
Indian Reserve 27	5,574.32	147.00	5,721.32
Indian Reserve 32A	.....	1,669.52	1,669.52
Indian Reserve 39A	.....	3,104.64	3,104.64
Indian Reserve 38B	.....	30.68	30.68
Kirkup	.....	51.74	51.74
MacNichol	.....	14.00	14.00
Melgund	5,029.83	2,287.39	7,317.22
Mutrie	.....	1,553.10	1,553.10
North of Buller	.....	140.17	140.17
North of Smellie	.....	1,018.29	1,018.29
North of Urnbach	.....	1,876.52	1,876.52
Pellatt	5,157.32	4,879.06	10,036.38
Redditt	.....	839.70	839.70
Redvers	.....	976.64	976.64
Rowell	.....	821.92	821.92
Rugby	.....	930.79	930.79
Smellie	.....	1,051.36	1,051.36
South of Pellatt	.....	1,763.17	1,763.17
South Worth	.....	2,488.97	2,488.97
Van Horne	3,970.51	912.63	4,883.14
Vermilion Additional	.....	1,262.22	1,262.22
Wabigoon	.....	1,122.02	1,122.02
Wainwright	5,161.51	2,104.27	7,265.78
West of Redditt	.....	502.17	502.17
Zealand	.....	5,109.31	5,109.31
Lands and Buildings	24,279.13	1,023.75	25,302.88
Weigh Scales	27,214.79	1,184.10	28,398.89
	$3,982,770.78	$ 914,012.33	$4,896,783.11
Manitoulin:			
Highway 68	$ 620,355.54	$ 188,017.85	$ 808,373.39
Sec. Hwy. 540	103,873.64	239,531.53	343,405.17
" " 540A	2,779.69	1,839.83	4,619.52
" " 542	83,570.02	92,661.02	176,231.04
" " 542A	.....	1,226.57	1,226.57
" " 551	21,418.46	25,403.93	46,822.39
" " 637	76,449.59	72,242.77	148,692.36

DISTRICT	Construction	Maintenance	Total
Manitoulin (Cont'd):			
Unincorporated Townships:			
Campbell	$ 9,224.55	$ 4,409.25	$ 13,633.80
Dawson	.....	2,486.81	2,486.81
Mills	28,838.19	4,712.99	33,551.18
Robinson	.....	5,077.45	5,077.45
Development Road:			
Providence Bay–Tehkummah Road	.....	31,134.57	31,134.57
	$ 946,509.68	$ 668,744.57	$1,615,254.25
Muskoka:			
Highway 11	$ 51,404.91	$ 135,369.21	$ 186,774.12
" 35	1,345,576.80	42,287.23	1,387,864.03
" 60	3,284.62	5,114.85	8,399.47
" 69	166,971.47	51,918.43	218,889.90
" 103	40,030.68	57,630.46	97,661.14
" 118	699,026.03	62,690.98	761,717.01
" 400	4,216.17	.....	4,216.17
Sec. Hwy. 501	25,811.83	51,769.99	77,581.82
" " 514	11,200.54	28,313.65	39,514.19
" " 516	1,570.39	28,253.46	29,823.85
" " 525	46,369.41	16,489.08	62,858.49
" " 527	24,951.82	18,795.57	43,747.39
" " 532	77,372.22	77,269.88	154,642.10
" " 592	26.05	366.96	393.01
" " 612	1,181.19	7,763.36	8,944.55
" " 632	7,101.41	13,472.73	20,574.14
Access Road:			
Oakley Township Road	13,067.74	.....	13,067.74
Miscellaneous Surveys	833.89	.....	833.89
Connecting Links:			
Town of Bracebridge	5,294.41	1,574.83	6,869.24
Town of Gravenhurst	.....	3,519.19	3,519.19
Town of Huntsville	2,200.38	3,579.27	5,779.65
Village of Port Carling	.....	879.11	879.11
Unincorporated Townships:			
Baxter	.....	20,808.73	20,808.73
Gibson Indian Reserve	23,634.97	.....	23,634.97
Gibson	16,922.63	2,633.65	19,556.28
Sinclair	.....	4,685.90	4,685.90
Development Roads:			
Rosseau–Huntsville Road	11,043.31	.....	11,043.31
Brackenrig Road	10,394.63	.....	10,394.63
Port Cunnington Road	55,206.07	.....	55,206.07
Huntsville–Rosseau (part)	146,677.50	.....	146,677.50
Twelve Mile Bay Road	64,187.49	.....	64,187.49
Seeley–Brunel Road	54,515.86	.....	54,515.86
Black Bridge–Mathiasville	21,196.11	.....	21,196.11
Coopers Falls–Housey Rapids	39,246.75	.....	39,246.75
Rotary Beach Road	1,555.74	.....	1,555.74
Lands and Buildings	7,173.74	243.62	7,417.36
	$2,979,246.76	$ 635,430.14	$3,614,676.90
Nipissing:			
Highway 11	$1,126,599.77	$ 198,679.65	$1,325,279.42
" 17	484,621.22	206,832.82	691,454.04
" 60	213,357.13	103,773.04	317,130.17
" 63	290,466.97	78,388.76	368,855.73
" 64	343,769.49	107,064.78	450,834.27
" 94	2,065.87	12,824.33	14,890.20
" 123	2,882.34	12,416.70	15,299.04
" 127	88,189.66	14,141.44	102,331.10
Sec. Hwy. 514	.....	1,575.13	1,575.13
" " 523	18,627.86	22,237.59	40,865.45
" " 528	159.92	2,671.52	2,831.44

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Nipissing (Cont'd):			
Sec. Hwy. 531	$ 12,635.72	$ 4,909.06	$ 17,544.78
" " 533	73,606.37	62,304.80	135,911.17
" " 539	11,521.55	40,688.94	52,210.49
" " 539A	.....	820.57	820.57
" " 630	105,563.08	43,323.12	148,886.20
Tertiary Road 805	14,666.56	1,680.31	16,346.87
Access Road:			
Henry–Crerar Township Road	Cr. 215.23	.....	Cr. 215.23
Miscellaneous Surveys	164.96	.....	164.96
Connecting Links:			
City of North Bay	60,769.16	.....	60,769.16
Town of Sturgeon Falls	23,415.18	1,739.14	25,154.32
Unincorporated Townships:			
Dickens	.....	1,870.81	1,870.81
Murchison	64,903.76	686.13	65,589.89
Sabine	.....	1,221.99	1,221.99
Finlayson	.....	1,812.29	1,812.29
Badgerow	10,959.10	11,076.27	22,035.37
Bastedo	.....	707.71	707.71
Boulter	.....	10.20	10.20
Crerar	.....	7,406.84	7,406.84
Falconer	.....	3,384.53	3,384.53
Gibbons	2,849.00	2,133.67	4,982.67
Gladman	.....	43.05	43.05
Grant	.....	4,367.30	4,367.30
Hugel	8,649.54	5,727.02	14,376.56
Kirkpatrick	29,520.49	8,454.94	37,975.43
Latchford	.....	426.71	426.71
Law	.....	5.50	5.50
Loudon	.....	1,959.74	1,959.74
MacPherson	2,440.49	8,997.29	11,437.78
Merrick	.....	24.93	24.93
Olive	.....	49.49	49.49
Pardo	.....	7.03	7.03
Phelps	1,109.28	5,939.77	7,049.05
Poitras	.....	100.66	100.66
Stewart	.....	224.36	224.36
Wyse	.....	590.90	590.90
Strathy	4,012.50	1,608.55	5,621.05
Development Roads:			
Concession vi/vii Road	1,476.90	.....	1,476.90
Caderette Corners–Highway 64	149,390.82	.....	149,390.82
Concession xii/xiii Road	1,349.88	.....	1,349.88
Trout Lake Road	4,732.59	.....	4,732.59
Lands and Buildings	31,171.82	637.60	31,809.42
Weigh Scales	.....	1,496.94	1,496.94
	$3,185,433.75	$ 987,043.92	$4,172,477.67
Parry Sound:			
Highway 11	$ 78,226.19	$ 132,067.92	$ 210,294.11
" 69	253,689.83	189,963.27	443,653.10
" 94	1,282.11	.....	1,282.11
" 124	282,558.91	142,014.76	424,573.67
Sec. Hwy. 510	162.64	4,429.43	4,592.07
" " 518	86,715.58	126,661.20	213,376.78
" " 520	55,179.01	79,176.29	134,355.30
" " 522	115,934.90	83,829.31	199,764.21
" " 524	3,226.79	6,269.89	9,496.68
" " 526	2,669.69	10,105.01	12,774.70
" " 529	43.94	41,354.75	41,398.69
" " 529A	.....	5,157.40	5,157.40
" " 532	60,442.06	28,160.80	88,602.86
" " 534	54,368.14	68,483.14	122,851.28
" " 559	.....	28,903.56	28,903.56
" " 592	832.17	11,479.44	12,311.61

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Parry Sound (Cont'd):			
Sec. Hwy. 612	$ 1,325.65	$ 4,696.34	$ 6,021.99
" " 632	440.46	8,076.26	8,516.72
" " 644	.....	685.31	685.31
Miscellaneous Surveys	621.45	.....	621.45
Sidewalk:			
Hamlet of Sprucedale	216.45	.....	216.45
Connecting Links:			
Town of Parry Sound	.....	4,434.19	4,434.19
Village of Rosseau	.....	183.42	183.42
Unincorporated Townships:			
Bethune	4,690.57	3,275.58	7,966.15
Blair	36,607.89	2,892.32	39,500.21
Burpee	1,434.04	2,427.42	3,861.46
Conger	3,655.74	1,674.86	5,330.60
Croft	7,927.95	3,912.93	11,840.88
Ferguson	2,108.43	942.87	3,051.30
Ferrie	1,795.49	1,133.76	2,929.25
Gurd	5,718.42	11,175.29	16,893.71
Hardy	26,810.91	6,562.29	33,373.20
Harrison	3,653.17	1,390.04	5,043.21
Henvey	.....	3,706.82	3,706.82
Laurier	7,824.92	7,180.07	15,004.99
Lount	3,811.61	5,916.69	9,728.30
McConkey	36,236.48	2,770.07	39,006.55
McKenzie	5,096.84	2,427.41	7,524.25
Mills	3,407.56	6,562.29	9,969.85
Monteith	4,755.01	4,357.62	9,112.63
Mowat	371.41	2,892.33	3,263.74
Patterson	9,139.09	3,005.56	12,144.65
Pringle	5,443.04	6,727.44	12,170.48
Proudfoot	6,178.65	4,736.08	10,914.73
Shawanaga	.....	1,200.00	1,200.00
Spence	4,536.70	5,844.19	10,380.89
Wallbridge	1,423.73	4,662.71	6,086.44
Wilson	.....	2,770.06	2,770.06
Doxis Indian Reserve	.....	78.68	78.68
Development Roads:			
Dillon Cove Road	.....	14,547.85	14,547.85
Concession xii/xiii Road	80,943.69	.....	80,943.69
Balsam Road	18,923.47	.....	18,923.47
Middle River Road (part)	.....	22,211.70	22,211.70
Strong–Machar Townline	14,247.94	.....	14,247.94
Miller Road (part)	35,152.15	.....	35,152.15
Killbear Park Road	139,572.74	.....	139,572.74
Burk's Falls Easterly and Southerly	15,542.06	.....	15,542.06
Machar Lake Bridge	6,982.18	.....	6,982.18
Concession xvi/xvii	26,259.74	.....	26,259.74
Lands and Buildings	9,629.29	1,005.47	10,634.76
Weigh Scales	.....	1,455.08	1,455.08
	$1,527,816.88	$1,115,577.17	$2,643,394.05
Rainy River:			
Highway 11	$4,488,271.31	$ 99,969.72	$4,588,241.03
" 71	30,631.91	39,577.06	70,208.97
Sec. Hwy. 600	46,385.82	79,212.25	125,598.07
" " 602	118,127.62	7,649.23	125,776.85
" " 611	2,455.34	25,904.39	28,359.73
" " 613	8,031.81	32,498.63	40,530.44
" " 615	16.67	15,133.23	15,149.90
" " 617	10,288.17	16,515.73	26,803.90
" " 619	2,221.02	23,777.35	25,998.37
" " 621	12,016.36	38,814.86	50,831.22
" " 622	12,473.78	16,805.76	29,279.54
" " 623	38,705.61	3,004.11	41,709.72
" " 633	.....	1,901.66	1,901.66

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Rainy River (Cont'd):			
Miscellaneous Surveys	$ 4,051.87	$	$ 4,051.87
Connecting Links:			
Town of Fort Frances	24,397.26	8,049.11	32,446.37
Town of Rainy River	.....	18.99	18.99
Unincorporated Townships:			
Dance	5,254.21	955.53	6,209.74
Dewart	.....	1,943.31	1,943.31
Indian Reserve 17A	.....	74.81	74.81
Indian Reserve 93	.....	12.50	12.50
Miscampbell	.....	2,530.49	2,530.49
Melles	11,333.50	3,681.26	15,014.76
North of Fleming	.....	35.00	35.00
Sifton	.....	537.62	537.62
Spohn	.....	470.32	470.32
Sutherland	.....	704.48	704.48
Development Roads:			
Morley/Shenston Townline	46,192.38	.....	46,192.38
Dilke/Nelles Boundary Road	3,756.36	.....	3,756.36
Lands and Buildings	19,970.29	3,039.46	23,009.75
	$4,884,581.29	$ 422,816.86	$5,307,398.15
Sudbury:			
Highway 17	$ 397,789.20	$ 246,683.74	$ 644,472.94
" 64	23,695.65	66,296.58	89,992.23
" 68	226,169.13	49,720.34	275,889.47
" 69	115,186.56	214,394.60	329,581.16
" 101	698,073.17	116,871.39	814,944.56
" 129	12,321.82	89,001.67	101,323.49
Sec. Hwy. 528	959.53	18,884.35	19,843.88
" " 528A	4,090.49	6,416.53	10,507.02
" " 535	62,170.68	61,309,13	123,479.81
" " 536	226.08	7,417.08	7,643.16
" " 537	30,874.21	46,544.20	77,418.41
" " 539	12,628.15	6,094.33	18,722.48
" " 541	9,740.99	47,113.31	56,854.30
" " 541A	.....	3,008.89	3,008.89
" " 543	1,376.04	10,830.50	12,206.54
" " 544	242,161.14	307,589.16	549,750.30
" " 544A	.....	1,355.27	1,355.27
" " 545	264,038.78	38,969.45	303,008.23
" " 549	28,344.61	37,998.57	66,343.18
" " 553	.....	3,359.87	3,359.87
" " 560	10,927.24	77,118.99	88,046.23
" " 560A	.....	5,341.40	5,341.40
" " 606	6,132.51	2,417.63	8,550.14
" " 607	1,367.27	13,457.77	14,825.04
" " 607A	.....	687.01	687.01
" " 616	.....	633.26	633.26
" " 634	68,728.00	25,791.32	94,519.32
" " 637	2,927.63	53,091.47	56,019.10
Tertiary Road 805	8,049.61	1,055.11	9,104.72
Special Agreement:			
Bancroft Dr. (City of Sudbury)	167,899.67	.....	167,899.67
Access Roads:			
Cherriman Township Road	14,398.88	.....	14,398.88
Henry–Crerar Township Road	Cr. 176.10	.....	Cr. 176.10
Jack–Carter Township Road	15,370.71	.....	15,370.71
Busby–Calais Township Road	15,531.10	.....	15,531.10
Miscellaneous Surveys	43,767.65	.....	43,767.65
Connecting Links:			
Town of Capreol	.....	978.70	978.70
Town of Espanola	.....	2,338.22	2,338.22
Unincorporated Townships:			
Allen	.....	1,048.34	1,048.34
Bigwood	.....	7,333.50	7,333.50

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Sudbury (Cont'd):			
Davis	$	$ 1,021.46	$ 1,021.46
Delamere	7,779.36	2,582.70	10,362.06
Hoskin	.....	1,092.95	1,092.95
Haddo	.....	919.46	919.46
Henry	.....	336.97	336.97
Janes	19,917.40	500.48	20,417.88
McNish	.....	10.70	10.70
Scollard	3,655.06	1,245.60	4,900.66
Folevet	.....	100.62	100.62
Noble	.....	336.12	336.12
Togo	.....	336.13	336.13
Awrey	1,129.91	137.13	1,267.04
Broder	9,394.02	13,485.57	22,879.59
Burwash	9,154.92	4,591.49	13,746.41
Cartier	.....	353.04	353.04
Cascaden	.....	40.70	40.70
Cleland	3,534.25	5,546.56	9,080.81
Curtin	.....	308.46	308.46
Dieppe	.....	63.00	63.00
Dill	.....	3,556.69	3,556.69
Dryden	.....	3,917.65	3,917.65
Eden	.....	721.00	721.00
Fairbank	.....	162.09	162.09
Foster	.....	789.65	789.65
Hawley	36.57	159.35	195.92
Hendrie	50.92	130.87	181.79
Hess	.....	631.58	631.58
Lorne	10,428.90	9,254.42	19,683.32
Loughrin	.....	3,052.13	3,052.13
Louise	.....	2,744.88	2,744.88
MacLennan	.....	2,885.21	2,885.21
Merritt	6,082.92	4,364.99	10,447.91
Moncrief	.....	290.96	290.96
Mongowin	.....	1,525.09	1,525.09
Morgan	88.20	100.00	188.20
Norman	.....	882.87	882.87
Rathbun	.....	849.38	849.38
Scadding	.....	1,698.76	1,698.76
Secord	.....	1,732.75	1,732.75
Servos	.....	972.62	972.62
Street	9,875.00	849.38	10,724.38
Tilton	.....	285.85	285.85
Trill	88.21	188.09	276.30
Truman	.....	338.42	338.42
Wisner	.....	58.03	58.03
McKinnon	.....	668.85	668.85
Shakespeare	1,154.67	1,855.04	3,009.71
Development Roads:			
Spanish River Bridge	5,227.68	.....	5,227.68
River Road	52,487.12	.....	52,487.12
Webbwood Bridge and Approaches	63,978.76	.....	63,978.76
Vermilion Bridge Westerly	38,075.72	.....	38,075.72
Montee–Rouleau Road	12,102.36	.....	12,102.36
Fairbank's Lake Park Road	18,541.87	.....	18,541.87
Concession iv/v Road	36,227.84	.....	36,227.84
Birch Creek Bridge	752.15	.....	752.15
Lands and Buildings	145,066.42	3,804.48	148,870.90
	$2,939,600.63	$1,652,631.90	$4,592,232.53
Thunder Bay:			
Highway 11	$1,482,246.56	$ 460,975.01	$1,943,221.57
" 11A	7,922.76	50,581.10	58,503.86
" 17	1,008,836.93	371,788.17	1,380,625.10
" 61	162,598.78	50,396.92	212,995.70
" 130	7,143.23	25,816.21	32,959.44

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Thunder Bay (Cont'd):			
Port Arthur, Fort William Ring Road	$ 136,440.60	$	$ 136,440.60
Sec. Hwy. 580	50.98	3,070.17	3,121.15
" " 582	.....	1,985.08	1,985.08
" " 584	1,450.64	63,169.51	64,620.15
" " 584A	.....	355.91	355.91
" " 585	.....	24,860.83	24,860.83
" " 586	.....	1,565.72	1,565.72
" " 587	1,909.33	50,348.17	52,257.50
" " 588	17,619.40	52,245.09	69,864.49
" " 589	92.29	34,570.42	34,662.71
" " 590	1,637.89	37,432.42	39,070.31
" " 591	.....	6,152.29	6,152.29
" " 593	25,117.86	19,954.86	45,072.72
" " 595	36,200.03	38,579.62	74,779.65
" " 597	.....	10,039.99	10,039.99
" " 599	43,964.95	45,587.20	89,552.15
" " 608	5,128.20	30,788.78	35,916.98
" " 614	5,405.92	93,524.06	98,929.98
" " 625	28,732.54	39,749.58	68,482.12
" " 627	1,962.38	8,352.62	10,315.00
" " 628	5,952.07	7,432.93	13,385.00
" " 643	.....	3,356.40	3,356.40
Tertiary Road 800	318.61	26,850.31	27,168.92
" " 801	13,917.08	2,064.87	15,981.95
" " 802	6,655.84	4,812.66	11,468.50
Access Roads:			
Savant Lake S.–Sturgeon River	.....	Cr. 5,915.95	Cr. 5,915.95
Northern Lights Lake Road	126,237.02	.....	126,237.02
Industrial Road:			
Caramat–Manitouwadge	.....	24,309.51	24,309.51
Miscellaneous Surveys	227.74		227.74
Connecting Link:			
Town of Geraldton	.....	4,633.40	4,633.40
Unincorporated Townships:			
Armstrong	.....	Cr. 159.16	Cr. 159.16
Blackwell	.....	4.81	4.81
Boucher (U.T. South–West of)	.....	14.00	14.00
Conacher	.....	15.75	15.75
Dawson Road Lots	4,701.89	6,044.17	10,746.06
Devon	3,632.13	5,155.67	8,787.80
East Gull Lake U.T.	.....	150.00	150.00
Forbes	3,421.09	5,533.94	8,955.03
Fowler	2,429.20	6,049.03	8,478.23
Fraleigh	2,568.14	.....	2,568.14
Goldie	.....	530.31	530.31
Golding	.....	25.00	25.00
Gorham	8,289.19	12,696.14	20,985.33
Hardwick	3,000.00	2,137.03	5,137.03
Jacques	2,355.52	5,888.85	8,244.37
Joynt–Inwood	.....	581.29	581.29
Kilkenny	.....	60.22	60.22
Leduc U.T.	.....	15.00	15.00
Lismore U.T.	.....	14.43	14.43
Lybster	2,907.31	6,178.92	9,086.23
Lyons	.....	1,170.09	1,170.09
Marks	1,889.25	3,550.72	5,439.97
McTavish West U.T.	.....	307.56	307.56
Northwest of Ames U.T.	.....	111.13	111.13
Pearson	4,920.53	4,766.91	9,687.44
Pic	.....	28.88	28.88
Rossport	.....	204.32	204.32
Scoble	2,500.00	9,923.28	12,423.28
Sibley	2,251.44	6,090.04	8,341.48
Stirling	2,633.58	3,102.26	5,735.84
Strange	2,436.72	3,311.30	5,748.02

DISTRICT	Construction	Maintenance	Total
Thunder Bay (Cont'd):			
Upsala	$ 2,888.75	$ 5,209.19	$ 8,097.94
Ware	10,547.11	18,243.75	28,790.86
Development Roads:			
John Street Road	.....	2,000.00	2,000.00
Hillside Road	18,981.98	.....	18,981.98
Maplewood Avenue	111,931.74	.....	111,931.74
Twenty-fifth Sideroad (Townline)	30,092.29	.....	30,092.29
Golf Links Road Extension	61,117.63	.....	61,117.63
Sec. Hwy. 588 Northerly–Con. v/vi	5,865.38	.....	5,865.38
Lands and Buildings	18,889.69	3,834.19	22,723.88
	$3,438,020.19	$1,702,222.88	$5,140,243.07
Timiskaming:			
Highway 11	$1,038,734.36	$ 160,133.27	$1,198,867.63
" 65	357,213.86	162,425.29	519,639.15
" 66	501,716.23	109,563.37	611,279.60
" 101	58,636.81	28,686.24	87,323.05
" 112	162.37	23,627.27	23,789.64
Sec. Hwy. 544	2,664.63	.....	2,664.63
" " 558	294,201.88	21,748.87	315,950.75
" " 560	45,373.13	156,366.67	201,739.80
" " 562	22,018.92	17,171.16	39,190.08
" " 564	.....	12,678.93	12,678.93
" " 566	4,463.37	22,748.64	27,212.01
" " 567	10,925.91	44,337.36	55,263.27
" " 568	.....	968.50	968.50
" " 569	59,027.42	36,810.37	95,837.79
" " 570	8,060.39	5,913.99	13,974.38
" " 571	195.65	6,712.05	6,907.70
" " 573	.....	20,908.02	20,908.02
" " 624	35,608.13	46,130.10	81,738.23
" " 640	.....	3,801.46	3,801.46
" " 650	226.75	.....	226.75
Access Roads:			
Matachawan W. from Sec. Hwy. 566	7,997.62	.....	7,997.62
Adams Mine to Dane	.....	1,596.59	1,596.59
Davidson Township Road	2,953.60	.....	2,953.60
Gross Township Road	3,717.78	.....	3,717.78
Ingram Township Road	803.86	.....	803.86
Pearl Beach–Larder Lake	3,135.19	.....	3,135.19
Miscellaneous Surveys	19,798.78	.....	19,798.78
Connecting Links:			
Town of Cobalt	.....	3,018.87	3,018.87
Town of Haileybury	6,749.86	3,712.54	10,462.40
Town of New Liskeard	.....	5,412.06	5,412.06
Unincorporated Townships:			
Barber	.....	14.00	14.00
Bayly	.....	179.28	179.28
Beauchamp	.....	4,291.97	4,291.97
Benoit	.....	718.35	718.35
Blair	.....	1,418.52	1,418.52
Bryce	.....	50.74	50.74
Cairo	.....	309.36	309.36
Cane	.....	5,001.20	5,001.20
Catherine	.....	589.35	589.35
Eby	.....	1,673.40	1,673.40
Firstbrook	.....	282.43	282.43
Grenfell	.....	831.10	831.10
Haultain	.....	407.82	407.82
Henwood	.....	5,700.14	5,700.14
Hillary	.....	20.27	20.27
Ingram	.....	3,959.52	3,959.52
Keefer	.....	925.94	925.94
Lebel	.....	3,224.83	3,224.83
Lorrain	.....	37.29	37.29

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
Timiskaming (Cont'd):			
Maisonville	$	$ 736.64	$ 736.64
Marquis	196.74	2,692.02	2,888.76
Marter	1,535.98	4,433.45	5,969.43
Milner	.....	133.34	133.34
McEvoy	.....	922.80	922.80
Nicol	.....	214.58	214.58
Nordica	.....	922.80	922.80
Ossian	.....	748.25	748.25
Otto	9,594.66	4,697.33	14,291.99
Pacaud	.....	1,309.81	1,309.81
Pense	.....	219.09	219.09
Robillard	2,999.36	4,944.05	7,943.41
Savard	2,999.35	4,329.65	7,329.00
Sharpe	.....	1,054.23	1,054.23
Tudhope	.....	7.00	7.00
Development Roads:			
Goodfish Road	7,557.24	.....	7,557.24
Concession ii/iii Road	2,135.06	.....	2,135.06
Harley–Hilliard Townline	17,388.71	.....	17,388.71
Lands and Buildings	56,100.89	1,104.09	57,204.98
	$ 2,584,894.49	$ 952,576.26	$ 3,537,470.75
COUNTY AND DISTRICT TOTALS	$139,205,467.16	$ 31,326,535.56	$170,532,002.72
Sundry unallocated, District Office, Administrative, Engineering, Building, Inventory Charges, etc.	$ 1,790,477.55	$ 8,080,904.74	$ 9,871,382.29
TOTAL EXPENDITURES	$140,995,944.71	$ 39,407,440.30	$180,403,385.01

APPENDIX No. 2

DEPARTMENT EXPENDITURES BY HIGHWAYS

April 1st, 1963 to March 31st, 1964

Highway No.	Location	Mileage	Construction	Maintenance	Total
King's Highways					
2	Quebec Border–Windsor	438.4	$1,557,617.27	$1,297,248.40	$2,854,865.67
2A	Jct. Hwy. 401–Jct. Hwy. 2	1.3	5,136.69	1,264.86	6,401.55
3	Fort Erie–Windsor	246.4	3,205,084.53	655,621.58	3,860,706.11
3A	Hwy. 3–(Chambers Corners)–Jct. Hwy. 8 and Q.E.W.	22.8	21,457.39	38,969.94	60,427.33
3B	Hwy. 3–Windsor	5.0	177,865.95	13,455.33	191,321.28
3C	Hwy. 3 (Fort Erie)–Ridgeway	7.1	1,225.02	26,142.80	27,367.82
4	Port Stanley–Hwy. 10 (Flesherton)	131.7	1,914,893.76	399,126.48	2,314,020.24
5	Hwy. 27 (Toronto)– Hwy. 2 (Paris)	54.6	1,147,712.79	201,259.96	1,348,972.75
6	Port Dover–Tobermory	201.4	2,281,338.18	513,800.57	2,795,138.75
7	Ottawa–Hwy. 40 (Sarnia)	452.6	3,896,778.40	1,351,167.77	5,247,946.17
7A	Hwy. 115–Hwys. 7 and 12 (Manchester)	30.7	356,497.78	56,761.05	413,258.83
8	Niagara Falls–Goderich [7]	102.7	1,399,569.33	308,653.33	1,708,222.66
8A	Queenston Bridge–Hwy. 8 (St. Davids)	2.7	304.72	7,652.73	7,957.45
9	Hwy. 27 (Schomberg)–Hwy. 21 (Kincardine) [4]	97.7	418,114.57	256,467.64	674,582.21
10	Port Credit–Owen Sound	89.3	802,245.72	262,470.92	1,064,716.64
11	Toronto–Sec. Hwy. 622 Rainy River Easterly	1,121.0	10,409,282.32	2,052,333.47	12,461,615.79
11A	Port Arthur–Hwys. 11 and 17 (Sistonen's Corners)	20.5	7,922.76	50,581.10	58,503.86
12	Hwy. 401 (Whitby)–Hwy. 27 (Midland) [7]	72.5	415,867.60	175,628.84	591,496.44
14	Hwy. 33 (Bloomfield)–Hwy. 7 (Marmora)	41.5	577,144.88	129,301.47	706,446.35
15	Hwy. 2 (Barriefield)–Ottawa [7]	71.9	33,161.93	187,271.83	220,433.76
16	Hwy. 2 (Johnstown)–Ottawa	50.1	55,336.28	120,969.90	176,306.18
17	Quebec Border–Manitoba Border [11]	1,299.4	6,647,251.93	2,713,750.38	9,361,002.31
18	Leamington–Windsor	39.7	904,836.06	51,572.82	956,408.88
18A	Hwy. 18 (Kingsville)–Hwy. 18 (Malden Centre)	19.4	9,086.50	13,106.17	22,192.67
19	Port Burwell–Hwy. 86 (Tralee)	70.0	316,475.42	151,829.57	468,304.99
20	Hwy. 3A–Burlington S. Limits	37.6	793,795.17	140,833.74	934,628.91
21	Hwy. 3 (Morpeth)–Owen Sound	183.3	924,089.37	319,436.30	1,243,525.67
22	Hwy. 4 (Masonville)–Hwy. 7	28.5	2,828.80	46,125.63	48,954.43
23	Hwy. 7–Hwy. 9 (Teviotdale)	56.6	476,309.64	126,385.29	602,694.93
24	Port Dover–Collingwood [10]	111.7	490,428.83	251,332.10	741,760.93
24A	Paris–Galt	9.7	236.80	26,565.73	26,802.53
25	Hwy. 2 (Campbell's Corners)–Hwy. 24 (Ospringe)	25.6	88,360.06	84,402.61	172,762.67
26	Hwy. 400 (Barrie)–Owen Sound	64.8	123,898.65	180,976.16	304,874.81
27	Queen Elizabeth Way Penetanguishene	83.2	208,915.56	335,414.61	544,330.17
28	Hwy. 2 (Port Hope)–Hwy. 62 (Bancroft)	86.1	18,223.15	189,553.51	207,776.66
29	Hwy. 2 (Brockville)–Hwy. 17 (Arnprior) [15]	52.3	942,564.91	69,526.55	1,012,091.46
30	Hwy. 2 (Brighton)–Hwy. 7 (Havelock)	29.5	8,536.96	60,422.94	68,959.90
31	Hwy. 2 (Morrisburg)–Ottawa	41.0	22,290.74	152,699.86	174,990.60

Highway No.	Location	Mileage	Construction	Maintenance	Total
32	Hwy. 2 (Gananoque)–Hwy. 15	11.3	$ 150.96	$ 35,303.28	$ 35,454.24
33	Kingston–Hwy. 14 (Stirling)	84.0	604,039.12	171,721.45	775,760.57
34	Hwy. 2 (Lancaster)–Hwy. 17 (Hawkesbury)	33.9	4,058.36	71,934.06	75,992.42
35	Hwy. 401–Hwy. 11B (N. of Huntsville) [7]	136.0	1,688,030.41	273,754.34	1,961,784.75
35A	Hwy. 121–Hwy. 35	2.0	641.38	2,914.96	3,556.34
36	Hwy. 7–Hwy. 28 (Burleigh Falls)	44.7	197,276.58	69,503.37	266,779.95
37	Hwy. 401 (Belleville)– Hwy. 7 (Actinolite)	26.4	20,416.75	68,272.97	88,689.72
38	Hwy. 2–Hwy. 7 (Sharbot Lake)	45.6	130,990.28	96,058.45	227,048.73
39	Hwy. 2–Windsor	16.0	140,795.39	24,400.19	165,195.58
40	Chatham–Hwy. 402 (Sarnia)	41.7	32,323.89	73,564.07	105,887.96
40A	Hwy. 40 (Corunna)–Hwy. 402	4.9	35,438.64	20,281.19	55,719.83
41	Hwy. 33 (Picton)–Pembroke	143.0	469,852.00	266,639.71	736,491.71
42	Hwy. 29 (Forthton)–Westport [29]	31.6	267,267.69	68,990.68	336,258.37
43	Hwy. 34 (Alexandria)–Hwy. 7 (Perth)	89.1	613,913.32	176,464.72	790,378.04
44	Hwy. 17 (Capp)–Hwy. 29 (Almonte)	11.5	12,413.15	17,765.49	30,178.64
45	Hwy. 2 (Cobourg)–Hwy. 7 (Norwood)	32.6	57,772.76	59,817.99	117,590.75
46	Hwy. 7–Hwy. 35 (Coboconk)	33.7	26,390.10	62,575.09	88,965.19
47	Hwy. 48 (Ringwood)–Hwys. 7 and 12	17.8	14,762.61	78,155.83	92,918.44
48	Steeles Ave. (Toronto)–Hwy. 46 (Bolsover) [12]	54.7	494,243.27	230,451.23	724,694.50
50	Metro. Toronto N. Limits–Hwy. 9	20.4	743,295.46	82,514.95	825,810.41
52	Hwy. 2 (Alberton)–Wentworth /Wellington Cty. Line	15.4	11,033.61	47,273.90	58,307.51
53	Hwy. 20–Hwy. 2 (Eastwood) [2]	27.3	13,852.01	74,191.45	88,043.46
54	Hwy. 3 (Cayuga)–Hwy. 2 (Cainsville)	25.3	161,325.42	116,261.77	277,587.19
56	Hwy. 3–Hwy. 53 (Elfrida)	14.6	13,700.83	40,104.63	53,805.46
57	Hwy. 3A Hwy. 20 (Bismarck)	8.9	43,679.28	19,240.57	62,919.85
58	Hwy. 3–Hwy. 8 (St. Catharines) [20]	10.0	116,776.25	52,671.18	169,447.43
59	Long Point Park–Shakespeare [3]	66.5	159,627.60	198,192.72	357,820.32
60	Hwy. 17–Jct. Hwy. 35 (Dwight)	134.8	1,083,985.27	198,767.39	1,282,752.66
61	U.S.A. Bdy. (Pigeon River)–Fort William	40.7	162,598.78	50,396.92	212,995.70
62	Hwy. 7 (Madoc)–Quebec Border [60]	116.5	856,598.77	206,733.82	1,063,332.59
63	North Bay Timiskaming	38.7	290,466.97	78,388.76	368,855.73
64	Hwy. 69–Hwy. 11 (Marten River) [17]	85.7	367,465.14	173,361.36	540,826.50
65	Quebec Border–Matachewan	80.5	357,213.86	162,425.29	519,639.15
66	Quebec Border–Hwy. 65	61.3	501,716.23	109,563.37	611,279.60
67	Iroquois Falls–Hwy. 101	20.9	293,101.00	38,025.66	331,126.66
68	South Baymouth–Hwy. 17 (Espanola)	86.7	846,524.67	237,738.19	1,084,262.86
69	Hwy. 12–Sec. Hwy. 545 (Capreol) [11]	204.0	536,226.14	494,085.88	1,030,312.02
71	Fort Frances–Hwy. 17 (Longbow Corners) [11]	99.7	56,550.73	108,717.00	165,267.73
72	Hwy. 17 (Dinorwic)–Sioux Lookout	43.5	33,193.16	78,286.99	111,480.15
73	Port Bruce–Dorchester	22.6	218,432.18	33,327.19	251,759.37
74	Hwy. 3 (New Sarum)–Nilestown	13.9	78,413.61	24,091.14	102,504.75

Highway No.	Location	Mileage	Construction	Maintenance	Total
76	Hwy. 3 (Eagle)–Hwy. 2	11.3	$ 41,968.92	$ 22,775.67	$ 64,744.59
77	Leamington–Hwy. 401 (Comber)	14.0	30,743.56	21,907.63	52,651.19
78	Hwy. 21 (Dresden)–Hwy. 40 (Wallaceburg) [21]	10.4	402.47	10,503.36	10,905.83
79	Hwy. 2–Hwy. 7	28.8	6,144.75	55,421.41	61,566.16
80	Hwy. 2 (Strathburn)–Hwy. 40 (Courtright)	48.4	5,809.54	38,028.78	43,838.32
81	Hwy. 2 (Delaware)–Hwy. 21 (Grand Bend)	38.6	168,914.67	121,035.11	289,949.78
82	Hwy. 7–Hwy. 21 (Hanks Corners)	5.5	768.48	6,567.17	7,335.65
83	Hwy. 23 (Russeldale)–Hwy. 2 (Brewster)	24.1	18,952.65	58,746.53	77,699.18
84	Hwy. 4 (Hensall)–Hwy. 21 (St. Joseph)	10.7	419.30	13,892.74	14,312.04
85	Hwy. 8 (Waterloo)–Hwy. 86 (Elmira)	7.3	17,086.54	17,078.51	34,165.05
86	Hwy. 7–Hwy. 21 (Amberley)	78.7	258,219.41	181,393.51	439,612.92
87	Hwy. 9–Hwy. 86 (Bluevale)	19.6	2,740.64	39,048.67	41,789.31
88	Hwy. 11–Hwy. 27 (Bondhead)	5.0	311.87	14,288.63	14,600.50
89	Hwy. 400–Hwy. 23 (Palmerston)	63.5	65,797.26	164,480.33	230,277.59
90	Barrie–Angus	12.4	478,405.50	30,389.03	508,794.53
91	Hwy. 26–Hwy. 24 (Duntroon)	5.1	28,904.86	26,944.02	55,848.88
92	Hwy. 27 (Elmvale)–Wasaga Beach	7.9	968.68	22,600.17	23,568.85
93	Hwy. 11 (Barrie)–Hwy. 27 (Waverley)	17.5	1,097.47	40,669.42	41,766.89
94	Hwy. 11B (Callander)–Hwy. 17	5.5	3,347.98	12,824.33	16,172.31
95	Hornes Point–Hwy. 96 (Wolfe Island)	7.1	1,759.94	20,486.37	22,246.31
96	Quebec Head–W. end of Wolfe Island	20.4	41,754.80	56,008.39	97,763.19
97	Hwy. 6 (Freelton)–Hwy. 59	39.3	102,753.92	97,466.43	200,220.35
98	Hwy. 3 (Blenheim)–Hwy. 2 (Windsor)	55.2	80,220.31	77,278.50	157,498.81
99	Hwy. 8 (Dundas)–Hwy. 24	16.9	34,545.92	47,619.62	82,165.54
101	Quebec Border–Hwy. 17 (Wawa)	240.8	1,721,412.59	305,999.92	2,027,412.51
102	Hwy. 2 (Hamilton)–Hwy. 48 (Dundas)	2.2	408,809.37	4,724.37	413,533.74
103	Hwy. 12 (Waubaushene)–Hwy. 69 (Footes Bay)	29.9	55,976.59	67,194.82	123,171.41
104	Hwy. 9–Grand Valley	1.8	980.72	5,491.53	6,472.25
105	Hwy. 17 (Vermilion Bay)–Red Lake	109.9	1,422,129.97	153,049.92	1,575,179.89
106	Hwy. 28 (Dale)–Hwy. 2 (Welcome)	2.6	.....	6,250.52	6,250.52
107	Hwy. 18–Hwy. 3 (Ruthven)	1.0	1,397.84	3,738.31	5,136.15
108	Hwy. 17–Sec. Hwy. 639 (Quirke Lake)	26.0	62,106.95	54,890.92	116,997.87
112	Hwy. 11–Hwy. 66	12.4	162.37	23,627.27	23,789.64
114	Hwy. 3–(Maidstone)–Hwy. 98	1.2	67.64	834.21	901.85
115	Hwy. 401–Peterborough [35]	17.1	4,621.84	68,731.18	73,353.02
116	Hwy. 72 (Patricia Corners)–Hudson	10.4	64,369.93	5,811.71	70,181.64
117	Steeles Ave. (Toronto)–Hwy. 7	1.3	.....	1,718.15	1,718.15
118	Hwy. 35–Hwy. 69 (Glen Orchard)	49.2	699,026.03	62,690.98	761,717.01
119	Hwy. 17 (Dryden)–Richan	13.9	.....	13,767.26	13,767.26
120	Hwy. 400–Jct. Hwys. 11 and 93	0.7	6,269.84	1,003.07	7,272.91
121	Hwy. 35–Hwy. 28	83.0	191,839.42	112,434.86	304,274.28
122	Hwy. 2–Queen Elizabeth Way	3.8	4,193.65	155,276.11	159,469.76
123	Hwy. 11–North Bay Airport	4.5	2,882.34	12,416.70	15,299.04

Highway No.	Location	Mileage	Construction	Maintenance	Total
124	Hwy. 69 (Parry Sound)–Hwy. 11 (Sundridge)	50.5	$ 282,558.91	$ 142,014.76	$ 424,573.67
125	Hwy. 105–Cochenour Mine	7.7	143.84	8,668.84	8,812.68
126	Hwy. 401–Hwy. 2 (London)	3.2	1,287,290.76	7,291.25	1,294,582.01
127	Hwy. 62 (Maynooth)–Hwy. 60	34.4	96,399.50	26,671.55	123,071.05
128	Kenora–Redditt	17.7	6,161.43	26,733.16	32,894.59
129	Hwy. 17–Chapleau	139.6	54,360.60	286,520.27	340,880.87
130	Hwy. 11 (Port Arthur)–Hwy. 61	17.8	7,143.23	25,816.21	32,959.44
132	Hwy. 41–Renfrew	17.8	17,956.04	21,708.49	39,664.53
133	Hwy. 23 (Millhaven)–Hwy. 401	1.4	28,318.70	4,577.19	32,895.89
135	Hwy. 401–Hwy. 2 (Lambeth)	3.8	13.17	5,636.42	5,649.59
136	Hwy. 24–Orangeville	7.8	35,174.31	26,206.81	61,381.12
137	Hwy. 401–Thousand Island Bridge	1.1	85.48	5,770.91	5,856.39
400	Hwy. 401–Hwy. 12 (Coldwater)	73.7	460,888.21	437,434.06	898,322.27
401	Hwy. 34 (Lancaster)–Hwy. 3B (Windsor)	501.3	28,359,096.38	2,463,195.36	30,822,291.74
402	Hwy. 7–Blue Water Bridge	4.0	344,987.18	38,300.50	383,287.68
403	Toronto–Hwy. 401 (Woodstock)	.....	7,295,902.96	44,264.48	7,340,167.44
404	Extension to Don Valley Parkway	.....	190,923.35	.....	190,923.35
405	Q.E.W.–International Bridge (Queenston)	5.5	1,392,368.69	20,507.27	1,412,875.96
406	Welland–St. Catharines	.....	1,835,384.41	.....	1,835,384.41
407	Hwy. 115–Hwy. 27 (Proposed)	.....	331,031.05	.....	331,031.05
QEW	Fort Erie–Toronto	97.4	5,001,863.35	975,398.40	5,977,261.75
	Total Expenditure Allocated to King's Highways		$105,485,578.13	$24,336,835.21	$129,822,413.34
	Secondary Highways				
500	Hwy. 62 (Bancroft)–Hwy. 41 (Denbigh)	38.7	$ 288,547.55	$ 81,226.65	$ 369,774.20
501	Hwy. 103–Honey Harbour	9.2	25,811.83	51,769.99	77,581.82
502	Hwy. 2 (Napanee)–Hwy. 2 (Marysville)	8.7	2,779.03	18,515.62	21,294.65
503	Hwy. 46 (Kirkfield)–Hwy. 21 (Tory Hill)	78.2	160,162.78	124,680.79	284,843.57
504	Hwy. 28 (Apsley)–Sec. Hwy. 620	16.3	14,495.89	29,510.53	44,006.42
505	Hwy. 46–Sec. Hwy. 503	12.7	3,459.24	23,362.91	26,822.15
506	Hwy. 41–Plevna	22.1	93,419.02	44,121.02	137,540.04
507	Hwy. 28–Sec. Hwy. 503 (Gooderham)	39.6	54,283.44	64,601.49	118,884.93
508	Burnstown–Black Donald Mine	24.0	29,593.20	29,644.18	59,237.38
509	Hwy. 7–Snow Road	13.1	70,237.02	23,450.54	93,687.56
510	Sec. Hwy. 520–Hwy. 124	1.9	162.64	4,429.43	4,592.07
511	Brightside–Sec. Hwy. 508 (Calabogie)	20.5	3,135.01	25,926.01	29,061.02
512	Hwy. 41 (Eganville)–Hwy. 60	29.4	16,322.06	72,133.21	88,455.27
513	Hwy. 132 (Dacre)–Hyndford	10.2	6,805.78	18,900.50	25,706.28
514	Hwys. 35 and 60–Interlaken	10.0	11,200.54	29,888.78	41,089.32
515	Quadeville–Hwy. 62 (Combermere)	17.4	107,720.20	28,788.16	136,508.36
516	Port Sidney–Windermere	17.3	1,570.39	28,253.46	29,823.85
517	Hwy. 62–New Carlow	10.4	10,938.96	21,339.59	32,278.55
518	Sand Lake–Hwy. 69	55.9	86,715.58	126,661.20	213,376.78
519	Hwy. 121–Red Stone Lake	34.0	9,330.29	66,171.29	75,501.58
520	Hwy. 11–Ardberg [124]	33.6	55,179.01	79,176.29	134,355.30
521	Hwy. 62 (S. of Round Lake–N. of Round Lake)	13.2	22,459.41	36,479.92	58,939.33
522	Hwy. 11 (Trout Creek)–Loring	38.2	115,934.90	83,829.31	199,764.21

Highway No.	Location	Mileage	Construction	Maintenance	Total
523	Hwy. 60 (Madawaska)–Hastings Cty. N. Limits	13.5	$ 18,627.86	$ 22,237.59	$ 40,865.45
524	Sec. Hwy. 522–Sec. Hwy. 534	3.1	3,226.79	6,269.89	9,496.68
525	Gravenhurst–Muskoka Lake Sanitarium	1.5	46,369.41	16,489.08	62,858.49
526	Hwy. 69–Britt	2.3	2,669.69	10,105.01	12,774.70
527	Hwy. 118 (Baysville)– Hwy. 11B (Huntsville)	14.5	24,951.82	18,795.57	43,747.39
528	Hwy. 64–Wolseley Bay	8.3	1,119.45	21,555.87	22,675.32
528A	Sec. Hwy. 528–Pine Grove Landing	3.3	4,090.49	6,416.53	10,507.02
529	Hwy. 69–Hwy. 69 (Magnetawan)	16.3	43.94	41,354.75	41,398.69
529A	Sec. Hwy. 529–Bayfield Wharf	3.0	.....	5,157.40	5,157.40
530	Sec. Hwy. 519–Hwy. 35	12.5	121,603.35	24,764.72	146,368.07
531	Hwy. 17–Bonfield	2.4	12,635.72	4,909.06	17,544.78
532	Hwy. 11–Hwy. 69 (Hayes Corners)	40.9	137,814.28	105,430.68	243,244.96
533	Hwy. 17 (Mattawa)–Hwy. 63	34.2	73,606.37	62,304.80	135,911.17
534	Hwy. 11B (Powassan)–Restoule	21.7	54,368.14	68,483.14	122,851.28
535	Hwy. 64 (Noelville)–Riviere Veuve	31.2	62,170.68	61,309.13	123,479.81
536	Hwy. 17–Creighton Mine	3.8	226.08	7,417.08	7,643.16
537	Hwy. 69–Hwy. 17 (Wanapitei)	13.8	30,874.21	46,544.20	77,418.41
538	Hwy. 17 East and West of Algoma	3.5	.....	4,871.82	4,871.82
539	Hwy. 17 (Warren)–Hwy. 64 (Field)	26.4	24,149.70	46,783.27	70,932.97
539A	Sec. Hwy. 539–River Valley	0.8	.....	820.57	820.57
540	Hwy. 68 (Little Current)–Meldrum Bay	85.4	103,873.64	239,531.53	343,405.17
540A	Sec. Hwy. 540–Barrie Island	2.5	2,779.69	1,839.83	4,619.52
541	Hwy. 17 (Sudbury)–Skead	14.7	9,740.99	47,113.31	56,854.30
541A	Sec. Hwy. 541–Falconbridge	2.6	.....	3,008.89	3,008.89
542	Hwy. 68–Sec. Hwy. 540 (Gore Bay)	43.0	83,570.02	92,661.02	176,231.04
542A	Sec. Hwy. 542–Tehkumah	1.4	.....	1,226.57	1,226.57
543	Hwy. 69 (Sudbury)–Long Lake	5.1	1,376.04	10,830.50	12,206.54
544	Hwy. 17 (Sudbury)–Geneva Lake Mine	60.5	245,936.25	307,589.16	553,525.41
544A	Sec. Hwy. 544–Levack	1.3	.....	1,355.27	1,355.27
545	Sec. Hwy. 541–Milnet	17.0	264,038.78	38,969.45	303,008.23
546	Hwy. 17–Mount Lake	49.8	24,224.10	60,533.04	84,757.14
547	Hwy. 101–Hawk Jct	.....	204,543.40	.....	204,543.40
548	Hwy. 17–St. Joseph Island Rd.	45.6	31,004.62	74,260.92	105,265.54
549	Lake Panache–Hwy. 17	9.1	28,344.61	37,998.57	66,343.18
550	Hwy. 17 (Sault Ste. Marie)–Gros Cap	13.4	75,487.71	46,130.87	121,618.58
551	Sec. Hwy. 540 (West Bay)–Providence Bay [542]	12.2	21,418.46	25,403.93	46,822.39
552	Island Lake–Goulais Bay	13.4	6,115.39	29,189.77	35,305.16
553	Hwy. 17 (Massey)–Richie Falls Camp	50.2	17,643.37	37,705.16	55,348.53
554	Hwy. 129–Sec. Hwy. 546	10.9	7,169.54	26,618.94	33,788.48
555	Sec. Hwy. 557–Granary Lake Landing	7.0	.....	11,916.34	11,916.34
556	Hwy. 17 (Heyden)–Christiana Mine	26.3	20,040.82	65,601.86	85,642.68
557	Hwy. 17 (Blind River)–Matinenda Lake	13.5	.....	23,619.38	23,619.38
558	Hwy. 11 (Haileybury)–Montreal River	16.9	294,201.88	21,748.87	315,950.75
559	Hwy. 69 (N. of Nobel)–Hwy. 69 (N. of Shawanaga)	13.5	.....	28,903.56	28,903.56
560	Hwy. 11 (Englehart)–Gogama	145.4	56,300.37	233,485.66	289,786.03
560A	Sec. Hwy. 560–Westree	6.2	.....	5,341.40	5,341.40

Highway No.	Location	Mileage	Construction	Maintenance	Total
561	Hwy. 17 (Bruce Mines)–Sec. Hwy. 638	12.8	$ 8,187.13	$ 42,987.01	$ 51,174.14
562	Hwy. 11–Hwy. 65	9.0	22,018.92	17,171.16	39,190.08
563	Hwy. 17–Batchawana Bay	3.4	132.47	10,126.81	10,259.28
564	Hwy. 112 (Tarzwell)–Blanche River	9.8		12,678.93	12,678.93
565	Sec. Hwy. 550–Pte. Aux Pins	3.5	4,448.35	6,772.94	11,221.29
566	Hwy. 65 (Matachewan)–Ashley Mine	16.6	4,463.37	22,748.64	27,212.01
567	Hwy. 11 (North Cobalt)–Silver Centre	21.7	10,925.91	44,337.36	55,263.27
568	Hwy. 11–Kenogami	1.0		968.50	968.50
569	Hwy. 11–Jct. Hwy. 11 and Sec. Hwy. 624	17.5	59,027.42	36,810.37	95,837.79
570	Hwy. 11–Sesekinika	2.6	8,060.39	5,913.99	13,974.38
571	Sec. Hwy. 562–Hwy. 11 (Earlton)	3.7	195.65	6,712.05	6,907.70
572	Hwy. 11 (Ramore)–Holtyre	5.0	110.75	6,343.23	6,453.98
573	Hwy. 11–Sec. Hwy. 560 (Charlton)	12.5		20,908.02	20,908.02
574	Norembega–Sec. Hwy. 579	18.0	67,762.48	56,402.98	124,165.46
575	Hwy. 101 (Night Hawk Centre) Southerly	3.0		1,650.44	1,650.44
576	Hwy. 101–Waterhen Creek	1.9	27,213.58	3,820.31	31,033.89
577	Hwy. 101 (Shillington)–Hwy. 67 (Ansonville)	15.8	15,303.06	24,282.36	39,585.42
578	Hwy. 11 (Nellie Lake)–Hwy. 67 (Iroquois Falls)	5.1	36,523.40	25,272.37	61,795.77
579	Hwy. 11 (Cochrane)–Gardiner	21.8	41,425.62	55,507.57	96,933.19
580	Hwy. 11–D.H.O. Park (Lake Nipigon)	7.7	50.98	3,070.17	3,121.15
581	Hwy. 11–Remi Lake	3.1	258.22	8,085.69	8,343.91
582	Hwys. 11 and 17–Hurkett–Hwys. 11 and 17	4.0		1,985.08	1,985.08
583	Mead–Lac Ste. Therese	30.1	166,882.01	104,064.72	270,946.73
584	Hard Rock Mine–Nakina	42.5	1,450.64	63,169.51	64,620.15
584A	Hwy. 11–Sec. Hwy. 584	2.4		355.91	355.91
585	Hwys. 11 and 17–Pine Portage	22.9		24,860.83	24,860.83
586	Hwy. 11–Lower Shebandowan Lake	3.3		1,565.72	1,565.72
587	Hwys. 11 and 17–Silver Islet	22.6	1,909.33	50,348.17	52,257.50
588	Hwys. 11 and 17–Round Lake Road	34.8	17,619.40	52,245.09	69,864.49
589	Hwys. 11A and 17A–Dog Lake Road	18.7	92.29	34,570.42	34,662.71
590	Hwy. 130–Sec. Hwy. 588	25.1	1,637.89	37,432.42	39,070.31
591	Sec. Hwy. 589–Northerly	4.9		6,152.29	6,152.29
592	Hwy. 11 (Novar)–Hwy. 11	9.8	858.22	11,846.40	12,704.62
593	Sec. Hwy. 588–Silver Mount Road	11.9	25,117.86	19,954.86	45,072.72
594	Dryden Hwy. 17	20.6	3,443.61	20,231.45	23,675.06
595	Sec. Hwy. 590–Cloud Lake Road	28.0	36,200.03	38,579.62	74,779.65
596	Hwy. 17 (Keewatin)–Minaki	8.1	4,327.90	64,549.86	68,877.76
597	Sec. Hwy. 595–Sec. Hwy. 608	6.8		10,039.99	10,039.99
598	Sec. Hwy. 604–Hwy. 128	2.7	1,066.25	7,034.40	8,100.65
599	Savant Lake–Pickle Crow Landing	107.6	60,247.16	75,278.95	135,526.11
600	Hwy. 71–Hwy. 11 (Rainy River)	60.8	46,385.82	79,212.25	125,598.07
601	Hwy. 17 (Dryden)–Hwy. 17	16.5	27,251.98	21,310.89	48,562.87
602	Hwys. 11 and 71 (Fort Frances) to Hwys. 11 and 71 (Emo)	29.1	118,127.62	7,649.23	125,776.85
603	Hwy. 17–Dyment	2.8		983.11	983.11
604	Kenora–Hwy. 128	15.5	23,491.04	14,124.56	37,615.60
605	Hwy. 17–Rugby Lake	7.7		5,727.30	5,727.30
606	Hwy. 17–Markstay	1.0	6,132.51	2,417.63	8,550.14

Highway No.	Location	Mileage	Construction	Maintenance	Total
607	Hwy. 64–French River	7.4	$ 1,367.27	$ 13,457.77	$ 14,825.04
607A	Sec. Hwy. 607–Hwy. 69	0.4	.....	687.01	687.01
608	Hwy. 61 (Moose Hill)–Sec. Hwy. 595	11.9	5,128.20	30,788.78	35,916.98
609	Hwy. 105–Clay Lake Landing	10.1	432.38	5,525.74	5,958.12
610	Hwy. 67–Hwy. 101	12.6	949.42	23,480.32	24,429.74
611	Sec. Hwy. 602–Burrlis–Miscampbell Twp. Line	12.5	2,455.34	25,904.39	28,359.73
612	Hwy. 103–Hwy. 69 Gordon Bay	7.0	2,506.84	12,459.70	14,966.54
613	Sec. Hwy. 602–Lake Despair Landing	25.5	8,031.81	32,498.63	40,530.44
614	Hwy. 17–Manitouwadge	36.4	5,405.92	93,524.06	98,929.98
615	Hwy. 71–Lake Despair	13.6	16.67	23,264.75	23,281.42
616	Hwy. 101–Palomer (CNR)	2.0	.....	633.26	633.26
617	Hwy. 11 (Stratton)–Sec. Hwy. 600	14.4	10,288.17	16,515.73	26,803.90
618	Hwy 105–Madsen	8.8	1,831.12	9,235.19	11,066.31
619	Hwy. 11 (Pinewood)–Sec. Hwy. 621	25.3	2,221.02	23,777.35	25,998.37
620	Hwy. 62–Hwy. 28	26.1	278,863.45	61,585.39	340,448.84
621	Hwy. 11 (Sleeman)–Lake of the Woods Dock	32.8	12,016.36	38,814.86	50,831.22
622	Hwy. 11 (Atikokan)Northerly	6.5	12,473.78	16,805.76	29,279.54
623	Hwy. 11–Sapawe	3.3	38,705.61	3,004.11	41,709.72
624	Hwy. 11 and Sec. Hwy. 569–Larder Lake	27.0	35,608.13	46,130.10	81,738.23
625	Caramat–Hwy. 11	20.0	28,732.54	39,749.58	68,482.12
626	Hwy. 11–Hwy. 67 (Porquois Jct.)	19.8	.....	20,401.25	20,401.25
627	Hwy. 17–Heron Bay	5.2	1,962.38	8,352.62	10,315.00
628	Hwys. 11 and 17–Red Rock	4.4	5,952.07	7,432.93	13,385.00
629	Hwy. 101–Timmins Airport	6.7	.....	13,011.73	13,011.73
630	Hwy. 17–Kiosk	18.5	105,563.08	43,323.12	148,886.20
631	Hornepayne–Hwy. 11	46.6	75,315.30	97,376.56	172,691.86
632	Sec. Hwy. 532 (Rosseau)–Hwy. 18 (Port Carling)	16.0	7,541.87	21,548.99	29,090.86
633	Hwy. 11–Kawene	3.7	.....	1,901.66	1,901.66
634	Hwy. 69 (Val Caron)–Sec. Hwy. 544	11.8	68,728.00	25,791.32	94,519.32
635	Hwy. 17–Ottawa River	1.6	.....	3,627.73	3,627.73
636	Hwy. 11–Frederickhouse Stn.	2.0	30,554.15	13,628.44	44,182.59
637	Killarney–Hwy. 69	41.8	79,377.22	125,334.24	204,711.46
638	Hwy. 17–Dunns Valley	23.9	11,040.04	63,774.44	74,814.48
639	Hwy. 108–Sec. Hwy. 546	.....	134,561.28	4,583.61	139,144.89
640	Jct. Hwy. 11 (Earlton)–Earlton Airport	1.7	.....	3,801.46	3,801.46
641	Hwy. 17–Pellatt	8.4	.....	24,128.98	24,128.98
642	Sioux Lookout–Alcona	.....	195.38	4,487.82	4,683.20
643	Nakina–Cavell	12.1	.....	3,356.40	3,356.40
644	Hwy. 69 (Pointe Au Baril)–Bay	0.6	.....	685.31	685.31
646	Central Patricia–Pickle Lake	4.5	2,361.05	2,843.06	5,204.11
647	Vermilion Bay–Blue Lake Provincial Park	.....	.....	3,317.46	3,317.46
648	Hwy. 121 (E. of Tory Hill)–Hwy. 121	23.5	551.67	37,288.19	37,839.86
649	Hwy. 36 (Bobcaygeon) Northerly	10.9	1,512.63	13,754.22	15,266.85
650	Hwy. 112 (Dane) Easterly	.....	226.75	.....	226.75
652	Sec. Hwy. 574 Easterly	.....	1,208.13	.....	1,208.13
653	Hwy. 11 (Smooth Rock Falls)–Fraserdale	.....	30,395.12	.....	30,395.12
	Total Expenditure Allocated to Secondary Hwys.		$5,159,050.84	$5,397,320.41	$10,556,371.25

Highway No.	Location	Mileage	Construction	Maintenance	Total
Tertiary Roads					
800	Hwys. 11 and 17 (Port Arthur N. Limits) North of Whistle Lake	62.1	$ 318.61	$ 26,850.31	$ 27,168.92
801	Hwy. 11 (Nezah)–Sturgeon River Mine	8.8	13,917.08	2,064.87	15,981.95
802	Hwy. 11 (Kashabowie)–Burchell Lake Road	8.5	6,655.84	4,812.66	11,468.50
804	Hwy. 105 Westerly–Manitou Falls Road	12.8	385.99	4,542.35	4,928.34
805	River Valley–Emerald Lake	35.0	22,716.17	2,735.42	25,451.59
Total Expenditures Allocated to Tertiary Roads			$ 43,993.69	$ 41,005.61	$ 84,999.30
Special Agreements:					
	Victoria Street (Town of Whitby)		$ 64,654.73	$	$ 64,654.73
	Bancroft Drive (City of Sudbury)		167,899.67	.....	167,899.67
	Jct. Hwy. 6–Brantford Township		12,942.67	.....	12,942.67
	County Road No. 15, North of Maitland		42,920.39	.....	42,920.39
	Hawk Junction		.....	945.35	945.35
Total Expenditure Allocated to Special Agreements			$ 288,417.46	$ 945.35	$ 289,362.81
Access Roads					
	Savant Lake–Sturgeon River		Cr. $ 3,579.48	Cr. $ 8,497.97	Cr. $12,077.45
	Pickle Crow Northerly		400.00	.....	400.00
	Panel Mine Road–Elliot Lake I.D.		.....	5,790.53	5,790.53
	Denison Mine Road–Elliot Lake I.D.		.....	4,539.12	4,539.12
	Shamrock Mine Road–Elliot Lake I.D.		.....	25,763.22	25,763.22
	Milliken Mine Road–Elliot Lake I.D.		.....	5,037.18	5,037.18
	Algoma–Nordic Mine Road–Elliot Lake I.D.		.....	3,254.65	3,254.65
	Northern Lights Lake Road		126,237.02	.....	126,237.02
	Missanabie and Dalton Road		234,491.11	.....	234,491.11
	Matachewan Westerly from Sec. Hwy. 566		7,997.62	.....	7,997.62
	Alice Township Line–Ignace Lake		718.10	.....	718.10
	Temple Township		15,912.70	.....	15,912.70
	Adams Mine–Dane		.....	1,596.59	1,596.59
	Kam-Kotia Mine Road		.....	15,524.29	15,524.29
	Green Lake–Bedford Township		3,521.15	.....	3,521.15
	Black Donald Road		3,042.32	.....	3,042.32
	Watt Lake Road (Herschel and McClure Twp.)		12,519.47	.....	12,519.47
	Hindon Township Road		Cr. 5,257.04	.....	Cr. 5,257.04
	Oakley Township Road		13,067.74	.....	13,067.74
	Cherriman Township		14,398.88	.....	14,398.88
	Henry–Crerar Township Road		Cr. 391.33	.....	Cr. 391.33
	Davidson Township		2,953.60	.....	2,953.60
	Gross Township		3,717.78	.....	3,717.78
	Ingram Township		803.86	.....	803.86
	Jack–Carter Township		15,370.71	.....	15,370.71
	Pearl Beach–Larder Lake		3,135.19	.....	3,135.19
	McCowan Township		658.11	.....	658.11
	Scarfe Township Road		2,892.07	.....	2,892.07
	Busby–Calais		15,531.10	.....	15,531.10
	Flagg Lake (Twp. 26, Range xxi)		3,573.87	.....	3,573.87
	Franklin Lake Road (Houghton–Wells Twp.)		Cr. 736.92	.....	Cr. 736.92
	Two Islands Lake (Griffith Twp.)		Cr. 2,314.09	.....	Cr. 2,314.09
Total Expenditure Allocated to Access Roads			$ 468,663.54	$ 53,007.61	$ 521,671.15

Location	Construction	Maintenance	Total
Industrial Roads			
Ignace–Valora	$ 20,000.00	$ 7,419.31	$ 27,419.31
Caramat–Manitouwadge	.....	24,309.51	24,309.51
Total Expenditure Allocated to Industrial Roads	$ 20,000.00	$ 31,728.82	$ 51,728.82
Ferries	$ 2,919.44	$ 309,383.95	$ 312,303.39
Bloor St. (Toronto)	77,445.11	.....	77,445.11
Yonge St. (Toronto)	4,781.21	.....	4,781.21
Ottawa Queensway	5,329,371.80	913.81	5,330.285.61
MacDonald Cartier Bridge	2,379,344.09	.....	2,379,344.09
Toronto International Airport Road	2,037,246.33	70.80	2,037,317.13
Wasaga Beach By-pass	225.00	.....	225.00
Port Arthur, Ft. William Ring Road	136,440.60	.....	136,440.60
Miscellaneous Surveys	346,803.65	.....	346,803.65
Sidewalks	22,055.93	.....	22,055.93
Connecting Links	4,523,063.29	317,179.69	4,840,242.98
Unincorporated Township Roads	709,293.04	668,365.89	1,377,658.93
Development Roads	11,016,300.72	100,663.45	11,116,964.17
Lands and Buildings	1,113,899.79	61,214.60	1,175,114.39
Weigh Scales	40,573.50	7,900.36	48,473.86
HIGHWAY TOTALS	$139,205,467.16	$31,326,535.56	$170,532,002.72
Sundry unallocated, District Office, Administrative, Engineering, Building, Inventory Charges, etc	$ 1,790,477.55	$ 8,080,904.74	$ 9,871,382.29
TOTAL EXPENDITURES	$140,995,944.71	$39,407,440.30	$180,403,385.01

[ ] Indicates that two highways share the same route; mileage for the section shared is shown against the bracketed highway.

APPENDIX No. 3

SCHEDULE OF CONTROLLED-ACCESS HIGHWAYS

April 1, 1963 to March 31, 1964

Hwy. No.	Place	Designated by Ontario Regulation Number	Mileage
3	Maidstone to Hwy. 401	331/63	5.64
17	Interchange areas on the Ottawa Queensway	113/63	2.00
24A	Waterford By-pass	259/63	8.33
40A	Sarnia By-pass	259/63	5.13
11, 17, 61	Lakehead Expressway	210/63	16.30
401 (New)	Twps. of Leeds, Landsdowne, Escott and Yonge	120/63	18.31
403	City of Hamilton	212/63	1.02
406	St. Catharines to Welland	174/63	12.83
407	Twps. of Vaughan and Markham	174/63	4.81
	Twp. of Vaughan	259/63	4.91
New Malton Airport Rd.	Twps. of Etobicoke and Toronto	174/63	1.21
	Total Mileage		80.49

APPENDIX No. 3A

SCHEDULE OF DESIGNATIONS AND RE-DESIGNATIONS OF SECTIONS OF THE KING'S HIGHWAY, SECONDARY HIGHWAY AND TERTIARY ROAD SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1964

This schedule includes:

1. Designations of (a) Newly assumed highways
   (b) Newly constructed highways and diversions
   (c) Interchanges
2. Re-Designations of widened highways

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2122-33	Cobden	May 30/63	17 T.C.	7.310
	P-2837-3	Thessalon	Mar. 21/63	*129	3.890
	P-3221-4	28, Range 16	Mar. 5/64	17 T.C.	2.050
	P-3380-35	Havilland and Tupper	April 10/63	17 T.C.	2.550
	P-8071-4	28, Range 24	Feb. 27/64	547	3.230
Brant	P-3275-22	Onondaga	Sept. 27/63	54	5.830
	P-3275-23	Onondaga	Oct. 17/63	54	7.270
Bruce	P-2618-22	St. Edmunds	Dec. 19/63	6	13.620
Cochrane	P-2222-38	O'Brien	Aug. 22/63	11	9.000
	P-2291-44	Idington	Oct. 24/63	11	10.000
	P-2432-22	Eilber	Jan. 9/64	11	8.270
	P-2608-42	Kendall and T'site of Hearst and Town of Hearst	Aug. 22/63	11	8.300
	P-2674-21	Newmarket and Aurora	Jan. 1/64	11	6.900
	P-2694-5	Machin	Dec. 19/63	11	1.000
	P-2731-35	Devitt	Dec. 5/63	11	9.460
	P-2775-35	McCrea	Aug. 22/63	11	9.500
	P-2873-8	St. John	Dec. 30/63	11	3.300
	P-2908-32	Owens	Nov. 7/63	11	3.900
	P-2912-7	Barker	Dec. 12/63	11	1.270
	P-2916-23	Williamson	Dec. 19/63	11	6.000

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Dufferin	P-3288-18	E. Luther, Melancthon and Amaranth	May 16/63	89	12.100
Durham	P-2550-18	Cartwright	Oct. 10/63	7A	9.200
	P-2678-18	Cavan	Dec. 19/63	28	6.210
Essex	P-2114-27	Sandwich S.	Oct. 17/63	3	5.640
	P-4050	Mersea and Tilbury W.	May 2/63	77	14.000
Grey	P-4047	Proton	May 2/63	89	
	P-4048	Arthur and Egremont	May 2/63	89	7.450
	P-4049	Normanby	May 2/63	89	
Haldimand	P-2768-6	N. Cayuga	Dec. 19/63	56	1.300
Halton	P-2842-20	Esquesing	April 25/63	25	0.940
Hastings	P-1945-14	Marmora	Oct. 17/63	7	2.700
Kenora	P-2142-28	Pellatt and Unsurveyed Territory and Town of Keewatin	Aug. 22/63	17 T.C.	4.200
	P-2143-37	Van Horne	April 10/63	17 T.C.	2.920
	P-2262-25	Jaffray	Aug. 22/63	17 T.C.	7.500
	P-2352-16	Wainwright	April 25/63	17 T.C.	5.000
	P-2855-23	Ignace	April 10/63	17 T.C.	7.250
	P-2978-2	Satterly	Mar. 21/63	*17 T.C.	3.000
	P-3513-8	Pellatt	Oct. 17/63	596	3.780
	P-8049-5	Unsurveyed Territory	Oct. 10/63	596	7.760
	P-8056-2	Gidley	Oct. 17/63	596	2.870
	P-8058-2	Pelican	Oct. 17/63	596	7.010
	P-8064-8	Unsurveyed Territory	Feb. 6/64	599	13.300
	P-8064-9	Unsurveyed Territory	Feb. 6/64	599	12.600
	P-8085	Ponsford and Connell	Nov. 21/63	646	2.100
	P-8089	Langton	Dec. 30/63	647	5.500
Lambton	P-4054-2	Sarnia	June 27/63	40A	5.130
	P-4056	Moore, Brooke and Enniskillen	Sept. 4/63	80	30.650
	P-4058	Village of Point Edward	Feb. 6/64	40C	0.150
Lincoln	P-1727-9	Louth	Feb. 6/64	8	4.880
	P-1912-25	Grimsby N.	Jan. 9/64	8	5.190
	P-1935-10	Clinton	Aug. 8/63	8	5.800
Muskoka	P-3300-30	Monck	Jan. 30/64	532	1.270
Nipissing	P-2330-26	Strathy	Nov. 7/63	11	6.840
	P-2366-2	Cassels	Aug. 8/63	11	0.080
	P-2383-6	Best	Aug. 8/63	11	2.390
	P-3441-5	Airy and Sabine	June 27/63	127	13.300
Norfolk	P-4052	Brantford, Oakland, Burford, Townsend and Windham	May 14/63	24	8.330
Northumberland	P-2516-40	Percy	Jan. 30/64	45	3.410
	P-2516-41	Percy	Jan. 30/64	45	2.600
	P-2558-14	Hamilton	June 27/63	28	0.630
Ontario	P-2549-5	Scugog	Oct. 31/63	7A	2.069
Parry Sound	P-2127-83	Armour	Nov. 7/63	11	8.260
	P-2567-6	Harrison	Aug. 8/63	529	7.000
	P-7063-6	Perry	May 2/63	518	0.250
	P-7109	Bethune	May 2/63	518	3.600
	P-7110	Proudfoot	May 2/63	518	5.000
	P-7115-1	Wallbridge	Sept. 27/63	529	8.730
	P-7122-1	Harrison	Nov. 21/63	644	0.600

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Peel	P-2199-20	Albion	June 27/63	9	3.030
Peterborough	P-5056	Smith	July 25/63	507	13.000
Prince Edward	P-1489-29	Hallowell	Dec. 12/63	14	5.050
	P-2049-36	Hallowell	Oct. 10/63	33	6.370
	P-2801-20	Sophiasburgh	Sept. 27/63	14	4.260
	P-3068-5	Hallowell	Dec. 5/63	41	1.700
Simcoe	P-5054	Innisfil	April 2/63	89	0.178
Sudbury	P-2159-15	Neelong	Feb. 13/64	17	3.090
	P-3192-4	Laura	July 4/63	637	1.720
	P-3290-7	Levack	Oct. 10/63	544	0.300
	P-3222-9	Foleyet	Dec. 19/63	101	8.600
	P-3551-12	Cochrane	May 16/63	101	5.260
	P-3554-3	Gallagher	May 16/63	101	2.440
	P-7027-10	Chewett	May 30/63	101	6.800
	P-7028-2	McGee	May 16/63	101	0.300
	P-7033-3	Sandy	May 16/63	101	6.900
	P-7036-10	Borden	May 16/63	101	7.800
	P-7038-2	Chapleau	May 16/63	101	1.070
Temiskaming	P-7118	Armstrong	Sept. 27/63	640	1.720
Thunder Bay	P-2156-45	Paipoonge	June 6/63	17 T.C.	10.700
	P-2187-23	Blake	May 16/63	61	9.500
	P-2565-10	Paipoonge	April 10/63	61	5.000
	P-2572-10	Neebing	July 25/63	61	4.700
	P-2763-32	Pardee	April 25/63	61	1.300
	P-2803-22	83	April 25/63	17 T.C.	8.900
	P-2843-8	82	Nov. 7/63	17 T.C.	10.060
	P-2895-19	Paipoonge	July 25/63	130	9.810
	P-2924-20	Crooks	June 6/63	61	10.800
	P-3428-6	Exton	Nov. 21/63	643	9.640
	P-8055-1	Rupert	Nov. 21/63	643	1.900
	P-8057-1	Danford	Nov. 7/63	643	0.630
	P-8060	Unsurveyed Territory	July 25/63	800	44.000
	P-8060-11	Unsurveyed Territory	Jan. 9/64	800	10.000
	P-8031-3	Pardee and Devon	Feb. 20/64	593	13.000
	P-8062-5	Unsurveyed Territory	Feb. 6/64	599	9.500
	P-8065	Pifher, Elmhirst, Irwin and Walters	Oct. 24/63	801	8.750
	P-8069	Neebing and City of Fort William	Aug. 1/63	(Lake'd Ex.)	4.300
	P-8070-1	McIntyre and MacGregor	Aug. 1/63	11 and 17 (Lake'd Ex.)	12.000
Victoria	P-1946-32	Ops	Sept. 27/63	7	6.270
Wellington	P-4046	Erin	April 25/63	25	4.800
	P-4047	W. Luther	May 2/63	89	6.800
	P-4049	Arthur and Minto	May 2/63	89	14.200
Wentworth	P-1941-17	Binbrook	Mar. 5/64	20	3.860
	P-2008-20	Binbrook	Oct. 10/63	56	3.860
	P-2008-21	Binbrook	Oct. 24/63	56	3.600
York	P-1698-110	Markham	Feb. 6/64	11	5.080
	P-2770-473	North York	July 11/63	401	1.210
	P-2800-25	Georgina	Dec. 5/63	48	3.900
	P-2800-26	Georgina	Dec. 5/63	48	4.470
	P-2800-27	Georgina	Dec. 5/63	48	3.710
	P-3117-54	Markham	June 27/63	48	6.290
	P-3119-22	Whitchurch	Dec. 30/63	48	5.200
	P-3120-13	Gwillimbury E.	June 20/63	48	8.960
	P-3273-6	King	July 4/63	9	5.000

* Omitted from last year's report.

APPENDIX No. 3B

SCHEDULE OF REVERSIONS AND TRANSFERS OF SECTIONS OF THE KING'S HIGHWAY AND SECONDARY HIGHWAY SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1964

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Carleton	P-1590-25	North Gower	Aug. 24/63	16	4.540
	P-1591-63	Nepean	April 1/63	16	0.420
	P-1591-66	Nepean	Aug. 24/63	16	1.670
Dufferin	P-1836-29	Mono	April 1/63	89	0.200
Durham	P-2064-35	Hope	Oct. 10/63	28	0.440
	P-2354-11	Mono	April 1/63	9	0.500
	P-2678-17	Cavan	May 25/63	28	0.530
	P-2740-46	Manvers	April 1/63	35	2.400
	P-3369-2	Cavan	Nov. 23/63	7	0.890
Haliburton	P-2738-20	Cardiff	April 1/63	500	2.120
Halton	P-1507-21	Nelson	Dec. 7/63	20	0.600
Hastings	P-1949-36	Village of Madoc (Twp. of Madoc)	Jan. 29/63	7 T.C.	0.130
	P-2333-23	Wicklow	Mar. 1/64	62	1.600
	P-3262-7	Faraday	July 20/63	109	0.001
	P-3540-0	Wollaston	Aug. 29/63	620	0.300
Kent	P-1619-25	Town of Dresden	Aug. 24/63	21	0.480
	P-3165-55	Tilbury East	April 1/63	401	0.170
	P-3165-57	Tilbury East	Sept. 28/63	401	1.250
Leeds	P-2026-47	Lansdowne	Sept. 27/63	401	0.100
Lincoln	P-1935-9	Clinton	May 25/63	8	0.670
	P-2116-63	Louth	June 1/63	Q.E.W.	0.530
Middlesex	P-2538-30	Town of Strathroy	Nov. 23/63	81	0.245
	P-3053-142	City of London, Twp. of Westminster	June 1/63	401	0.130
Muskoka	P-1753-44	Morrison	Aug. 29/63	11	0.230
	P-2537-71	Monck	June 15/63	118	0.160
Norfolk	P-1814-64	Delhi	Sept. 21/63	3	0.890
Ontario	P-2269-15	Uxbridge	Nov. 23/63	47	0.080
	P-2307-35	Whitby	July 13/63	401	1.650
	P-2310-86	Pickering	May 25/63	401	0.048
Oxford	P-3162-88	Blenheim	Oct. 27/63	401	0.230
	P-3162-89	Blenheim	Nov. 9/63	401	0.220
	P-3162-90	Blenheim	Nov. 9/63	401	0.056
	P-3162-91	Blenheim	Nov. 9/63	401	0.250
Peterborough	P-2954-36	N. Monaghan	June 1/63	28	1.080
	P-3369-1	N. Monaghan	May 25/63	7	0.940
Renfrew	P-2617-48	Village of Barry's Bay (Twp. of Sherwood)	Dec. 19/63	60 and 62	1.100
Russell	P-1775-24	Town of Rockland (Twp. of Clarence)	Aug. 29/63	17 T.C.	1.080
Simcoe	P-2759-79	W. Gwillimbury	Aug. 3/63	400	.....
	P-2847-138	Vespra	Aug. 10/63	400	0.059
	P-4007-6	Village of Wasaga Beach	Jan. 29/64	92	0.303

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Sudbury	P-2159-13	Neelon	June 1/63	17	0.080
	P-2168-71	Dowling	April 1/63	544	1.580
	P-3096-11	Ratter and Dunnet	April 1/63	535	0.100
	P-3098-8	Appleby	April 1/63	535	0.010
Temiskaming	P-2815-25	McVittie	April 1/63	66	0.150
	P-2815-26	McVittie	April 1/63	66	0.090
Victoria	P-1821-16	Emily	Mar. 7/64	7	1.000
Welland	P-2041-9	Stamford	Aug. 3/63	20	4.020
Wellington	P-1732-56	Town of Palmerston	July 30/63	23	0.680
York	P-3110-29	Scarborough	Sept. 28/63	48	3.450
	P-5008-5	Whitchurch	June 8/63	47	2.460

APPENDIX No. 3C

SCHEDULE OF EXISTING ROADS ASSUMED AS PORTIONS OF THE KING'S HIGHWAY, SECONDARY HIGHWAY AND TERTIARY ROAD SYSTEMS FOR THE FISCAL YEAR ENDING MARCH 31, 1964

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Brant	P-3275-19	Onondaga	June 6/63	54	0.450
	P-3275-21	Onondaga	June 4/63	54	0.720
Dufferin	P-3288-18	E. Luther, Melancthon and Amaranth	April 2/63	89	12.100
Essex	P-4050	Mersea and Tilbury W.	April 1/63	77	14.000
Frontenac	P-1877-28	Olden	July 17/63	7 T.C.	0.019
	P-3036-96	Kingston	Feb. 28/64	401	0.800
Grey	P-4047	Proton	April 1/63	89	.....
	P-4048	Arthur and Egremont	April 1/63	89	7.450
	P-4049	Normanby (see Wellington County)	April 1/63	89	.....
Halton	P-1710-12	Nelson	Nov. 5/63	25	0.155
	P-2842-20	Esquesing	April 1/63	25	0.940
Hastings	P-3463-16	Mayo	April 1/63	500	2.000
	P-6028-5	Tyendinaga	June 26/63	41	0.810
	P-6041	Denbigh	April 1/63	500	6.500
Kenora	P-8085	Ponsford and Connell	Nov. 21/63	646	2.100
Lambton	P-4054	Sarnia	May 1/63	40A	5.000
	P-4056	Moore, Enniskillin and Brooke	Aug. 12/63	80	30.650
	P-4058	Village of Point Edward	Jan. 6/64	40C	0.150
Leeds	P-3095-128	City of Brockville (Twp. of Elizabethtown)	Oct. 4/63	401	0.040
Lincoln	P-1935-11	Clinton	Oct. 16/63	8	0.038
Ontario	P-1922-42	Pickering	May 16/63	2	0.280
	P-1922-44	Pickering	July 17/63	2	0.013

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Parry Sound	P-2567-6	Harrison	July 12/63	529	7.000
	P-7063-6	Parry	April 1/63	518	0.250
	P-7109	Bethune	April 1/63	518	3.600
	P-7110	Proudfoot	April 1/63	518	5.000
	P-7115	Wallbridge	July 17/63	529	2.630
	P-7122	Harrison	Pct. 17/63	644	0.590
Peel	P-1573-51	Caledon	Dec. 20/63	10	0.025
	P-2093-47	Albion	Feb. 18/64	50	0.110
Peterborough	P-5056	Smith	June 26/63	507	1.300
Prescott	P-1867-21	N. Plantagenet	June 26/63	17 T.C.	0.110
Renfrew	P-6040	Raglan and Lyndoch	April 1/63	500	12.000
Simcoe	P-2145-19	W. Gwillimbury	June 13/63	11	0.014
	P-5054	Innisfil	April 2/63	89	0.178
Temiskaming	P-7118	Armstrong	Aug. 15/63	640	1.720
Thunder Bay	P-8031-3	Pardee and Devon	Feb. 20/64	593	13.000
	P-8060	Unsurveyed Territory	July 25/63	800	44.000
	P-8060-11	Unsurveyed Territory	Jan. 9/64	800	10.000
	P-8065	Pifher, Elmhirst, Irwin and Walters	Oct. 24/63	801 Tertiary Rd.	8.750
Welland	P-1654-24	Bertie	Dec. 20/63	3	0.192
Wellington	P-4046	Erin	April 1/63	25	4.800
	P-4047	W. Luther	April 1/63	89	6.800
	P-4049	Arthur and Minto	April 1/63	89	14.200
Wentworth	P-1991-32	Beverly	Feb. 10/64	8	0.140
York	P-1698-103	Vaughan	April 30/63	11	0.005

APPENDIX No. 4

BRIDGES COMPLETED DURING 1963

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Aux Sable River (The Cut)	Steel low truss	40′/120′/40′	Hwy. 21 Morpeth–Pt. Albert	Bosanquet	33	E. Lake Rd.	Lambton	1
Avenue Road	Steel plate girder, simply supported	110′/122′/110′	Hwy. 401 Toronto By-pass	N. York	11	I	York	6
Bass Creek Bridge	Laminated timber trestle	2 @ 13′-3″ 4 @ 16′	Hwy. 11 Cochrane–Kapuskasing	O'Brien	10	X	Cochrane	16
Bathurst St. (Widening)	Prestressed box girder (extension)	65′-4 3/8″	Hwy. 401 Toronto By-pass	N. York	10	I–II	York	6
Beverley Creek	Concrete rigid frame	32′-1 3/4″	Hwy. 42 Village of Delta	Bastard	23	IX	Leeds	8
Boyne Creek Bridge 2	Concrete rigid frame	31′-11 1/8″	Hwys. 60 and 35 Huntsville–Dwight	Franklin	14	XII	Muskoka	11
Boyne Creek Bridge 3	Concrete rigid frame box culvert	30′	Hwys. 60 and 35 Huntsville–Dwight	Franklin	11	XI	Muskoka	11
Brookdale Road South Raisin River	Twin rigid frame box culvert	20′/20′	North of Cornwall	Cornwall	12–13	III	Stormont	9
Buckshot Creek Bridge	Creosoted timber bridge	2 @ 17′-3″ 3 @ 20′	Twp. Rd. Plevna–Ompah	Clarrendon	39	VI	Frontenac	10
Carmen Road Overpass	Continuous boat type	40′/75′/75′/40′	Hwy. 401 Prescott–Cornwall	Matilda	24–A	I–R.2	Dundas	9
Carp River Bridge	Continuous steel beam	25′/30′/30′ 30′/25′	Hwy. 17 Chippewa–Hwy. 568	Fisher	C	....	Algoma	18
C.N.R. Overhead near Keele St. (Widening)	Concrete rigid frame	66′-11 3/8″ north 47′-9 1/4″ south	Hwy. 401 Toronto By-pass	N. York	10	III	York	6
C.N.R. Overhead East of Rainy Lake Causeway	Steel plate girder (welded)	80′	Hwy. 11	Halkirk	9–10	III	Rainy River	20
Cockburn Creek	Concrete rigid frame	51′	Hwy. 15 Smith Falls–Pt. Elmsley	N. Elmsley	4	VI	Lanark	8
Commissioners Road	Concrete beams, prestressed	52′/67′-8″ 67′-8″/52′	Hwy. 126 City of London	.....	....	....	Middlesex	2
Corbett Creek	Concrete barrel arch	35′	Hwys. 11 and 17 4.8 miles west of Ft. William	Paipoonge	24	II–III	Thunder Bay	19

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Corman Twp. C.P.R. Overhead	Continuous steel beam	48′/51′/51′	Hwy. 17 6.3 miles west of English River	Corman	..	...	Kenora	19
County Road 22 Overpass	Continuous boat type	40′ 75′ 75′ 40′	Hwy. 401 Prescott Cornwall	Edwardsburg	6–7	II	Grenville	9
County Road 31	Steel plate girder, simply supported	70′/107′/107′ 70′	Hwy. 406 St. Catharines–Welland	Grantham-Thorold	15 & 23	X	Lincoln–Welland	4
Curtin Twp. C.P.R. Overhead	Continuous boat type with haunches	50′ 73′/50′	Hwy. 68 Espanola–Little Current	Curtin	....	....	Sudbury	17
Deer Creek Bridge	Laminated timber trestle	2 @ 13′-3″ 3 @ 16′	Hwy. 539 Warren River Valley	Crerar	10	I–II	Nipissing	13
Deer River at Coehill	Concrete beam, prestressed	50′	Hwy. 620 Hwy. 62–Apsley	Wollaston	13	IX	Hastings	10
Dixon Road	Steel plate girder, simply supported	41′-7″/87′-9″ 117′-3″/41′-7″	New Hwy. to International Airport	Etobicoke	22	IV	York	6
Elbow Creek Bridge	Steel beam, timber deck	36′	Res. Rd. Valora–Savant Lake	Unsurv. Ter.	....	....	Kenora	19
Fifteen Mile Creek	Steel beam, timber deck, timber abuts.	60′-2½″	Hwy. 583 Hearst–Coppell	Lowther	18–19	XI	Cochrane	16
Garden City Skyway at Homer	Continuous steel girder	100′-9″/10 @ 101′-6″/14 @ 126′-6″/127′-9″ 201′/200′/ 201′-9″/2 @ 259′-9″/365′-6″ 2 @ 203′-6″ 202′-9″/152′-9″ 11 @ 151′-6″ 150′-9″	Q.E.W. St. Catharines–Ft. Erie	City of St. Catharines	....	...	Lincoln	4
Geneva St. Culvert	Triple concrete rigid frame box culvert	3 @ 7′	Hwy. 406 City of St. Catharines	....	...	....	Lincoln	4
Ghost River Bridge	Continuous steel girder	60′/80′/60′	Hwy. 101 16.3 miles west of Quebec Border	Harker	....	...	Cochrane	14
Glendale Ave.	Continuous steel plate girder (dual)	40′/90′-6″/40′	Hwy. 406 City of St. Catharines	....	....	....	Lincoln	4
Glen Elbe Creek Bridge	Concrete rigid frame	26′	Hwy. 42 Forthton–Athens	Rear of Young and Escott	2–3	VIII	Leeds	8

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Grand Bend Culvert (Ausable River Tributary)	Twin rigid frame box culvert	2 @ 14′	Hwy. 81 at Grand Bend	Stephen	1	East of Lake Rd.	Huron	1
Head Lake Narrows	Continuous concrete "T" girder	53′-5″/74′ 53′-5″	Hwy. 121 Minden–Haliburton	Dysart	14	VIII	Haliburton	11
Hwy. 2 Interchange	Steel beam, simply supported	2 @ 46′ 2 @ 97′-10″	Hwy. 401 Toronto–Windsor	Tilbury E.	10	V–VI	Kent	1
Hwy. 2 Overpass	Concrete hollow box girder	2 @ 108′	Hwy. 401 Cornwall–Quebec Bdry.	Charlotten-burg	L & 38	I	Glengarry	9
Hwy. 403–Ramp "J" Underpass–Chedoke 16	Continuous steel plate girder	50′/70′/70′/70′ 65′/104′/94′/70′	Hwy. 403 City of Hamilton	.....	....	....	Wentworth	4
Hwy. 403–King St. Underpass–Chedoke 17	Continuous steel plate girder	70′/70′/69′/77′ 69′/80′/80′/75′/ 85′ 75′ 80′ 80′	Hwy. 403 City of Hamilton	.....	....	....	Wentworth	4
Hwy. 403 Ramp "H" Underpass–Chedoke 18	Continuous steel plate girder	80′, 80′, 68′, 90′ 80′/62′	Hwy. 403 City of Hamilton			....	Wentworth	4
Hwy. 403–Church Access Overhead (C.P.R.) Chedoke 19	Steel beam, simply supported	38′-3⅞″	Hwy. 403 City of Hamilton	.....	....	....	Wentworth	4
Hwy. 403–King St. Overhead (C.P.R.) Chedoke 20	Steel beam, simply supported	37′-2″	Hwy. 403 City of Hamilton	.....	....	....	Wentworth	4
Hwy. 403 Ramp "I" Overpass–Chedoke 25	Concrete rigid frame (dual)	34′	Hwy. 403 City of Hamilton		....	....	Wentworth	4
Horners Creek Bridge	Concrete beam (precast)	2 @ 39′-3″	Hwy. 2 Paris–Woodstock	Burford	15	I	Brant	2
Horners Creek Bridge	Concrete rigid frame	64′	Hwy. 97 Hickson–Galt	Blandford	4	X	Oxford	3
Indian River Bridge	Concrete beam, precast, post tensioned	85′-6″	Hwy. 41 Eganville–Pembroke	Stafford	31	I	Renfrew	10
Kaylers Creek Bridge	Concrete girder, prestressed	37′	Hwy. 2 Napanee–Odessa	Ernestown	4	IV	Lennox and Addington	8
Little Creek Bridge	Cont. concrete slab, precast, prestressed	29′-6½″/30′-1″ 29′-6½″	Hwy. 54 Caledonia–Cainsville	Onondaga	87	River Range	Brant	4
Little Mississippi River Bridge	Concrete rigid frame	31′/38′/31′	Hwy. 500 Bancroft–Denbigh	Mayo	23	XIII	Hastings	10
Madawaska River Bridge	Timber bridge, laminated deck	50′-5″/51′-1″ 50′-5″	Twp. Rd. 10 miles east of Whitney	Murchison	20	VI	Nipissing	10

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Main St. Bridge 25	Concrete rigid frame	60′	O.Q.W. City of Ottawa	.....	....	....	Carleton	9
Maitland River (Zetland Bridge)	Continuous steel plate girder (welded)	93′-4″/114′ 93′-4″	Hwy. 86 Wingham–Amberley	Turnberry–Wawanosh	17 & 37	B–XIV	Huron	3
Mattawishkwia River Bridge	Steel plate girder, simply supported	3 @ 75′	Hwy. 583 Hearst Coppell	Kendall	27	X	Cochrane	16
Medway Creek Bridge	Concrete rigid frame	50′	Hwy. 4 London Lucan	London	16–17	XII	Middlesex	2
Medway Creek Bridge	Concrete rigid frame	50′	Hwy. 4 London Lucan	London	16–17	XI	Middlesex	2
Mildmay Bridge (Otter Creek)	Twin box culvert	2 @ 18′	Hwy. 9 Mildmay–Walkerton	Carrick	25	C & D	Bruce	3
Mimico Creek Bridge	Concrete girder, prestressed	40′-10 1/2″/42′ 40′-10 1/2″	New Hwy. to International Airport	Etobicoke	21–22	III	York	6
Moulinette Road, Long Sault Bridge–C.N.R. Overhead	Steel beam, simply supported	51′-8″/74′-2″ 51′-8″	Moulinette Rd. Long Sault	Cornwall	37–38	V	Stormont	9
Naiscoot River Bridge	Steel beam	120′	Hwy. 69 Sudbury–Parry Sound	Harrison	26	X	Parry Sound	17
Neebing Twp. C.P.R. Overhead	Steel plate girder, supported	2 @ 48′-9″/2 @ 49′-4 1/2″/2 @ 50′-9″	Hwys. 11 and 17 3.8 miles west of Ft. William	Neebing	25	III	Thunder Bay	19
Nogies Creek Bridge	Welded steel plate girder	72′	Hwy. 36 Lindsay–Burleigh Falls	Harvey	21	XVI	Peterborough	7
Painkiller Creek Bridge	Continuous steel beam	41′/53′/41′	Hwy. 101 3.9 miles east of Matheson	Beatty–Hislop	11	I & VI	Cochrane	14
Palliser Creek Bridge	Concrete beam, prestressed	46′	Hwy. 14 Hwy. 401 Foxboro By-pass	Sidney–Thurlow	1 & 38	V	Hastings	8
Phelan Creek Bridge	Concrete rigid frame	45′	Hwy. 97 Hickson–Galt	E. Zorra	20–21	XIII	Oxford	3
Pinewood River Bridge	Concrete beams, prestressed, simply supported	81′/97′/81′	Hwy. 11 7.9 miles west of Stratton	Dilke	22	Sec. 27	Rainy River	20
Puce River Bridge	Concrete rigid frame	33′	Hwy. 98 Blenheim Windsor	Maidstone	11	N.M.R.	Essex	1

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Renforth Drive	Concrete rigid frame	40′	New Hwy. to International Airport	Etobicoke	18	IV	York	6
Ribudys Creek Bridge	Concrete rigid frame open culvert (twin)	2 @ 15′	Hwy. 64 3 miles north of Lavigne	Caldwell–Kirkpatrick	1 & 12	I	Nipissing	13
Rideau Canal Bridge 24	Concrete beam, prestressed	133′ 134′ 133′	Ottawa Queensway				Carleton	9
Sandusk Creek Bridge	Concrete rigid frame	40′	Hwy. 6 Hagersville–Jarvis	Walpole	9	V	Haldimand	4
Selby Creek Bridge	Concrete rigid frame	42′	Hwy. 2 2 miles south of Marysville	Tyendinaga	30 31	II SR	Hastings	8
Spadina Bridge 1 (Bridgeland Ave.)	Concrete beam, prestressed	North 88′-8 7/8″ South 80′-6 3/8″	Hwy. 401 Toronto By-pass	N. York	....	....	York	6
Spadina Bridge 2	Concrete box girder, prestressed	48′-11 3/4″ 57′-1/2″	Hwy. 401 Toronto By-pass	N. York	....	....	York	6
Spanish River Bridge at Webbwood	Welded steel plate girder	90′/225′/90′	Dev. Rd. 563 Webbwood–Espanola	Hallam	6	VI	Sudbury	17
Sturgeon River Bridge	Steel through truss	147′	Twp. Rd. 8 miles west of River Valley	Janes	3	II	Sudbury	13
Trent Canal at Roscdale (Balsam River)	Continuous steel beam	2 @ 65′ 5 @ 85′	Hwy. 35 at Rosedale	Fenelon	31–32	VIII	Victoria	7
Tritown By-pass	Concrete girder, prestressed	77′-6″	Hwys. 11 and 65 Tritown By-pass	Dymond	6	II	Timiskaming	14
Wabi River Bridge	Continuous steel plate girder	90′/225′/90′	Hwy. 11 Tritown By-pass	Dymond	7	II	Timiskaming	14
Wabigoon River Bridge	Steel low truss	80′	Hwy. 17 Dryden–Oxdrift	Wainwright	7	I–II	Kenora	20
Westchester Ave. Underpass	Steel plate girder, simply supported	2 @ 58′ 2 @ 78′-6″	Hwy. 406 City of St. Catharines	.....	....	....	Lincoln	4
Westley Creek Bridge	Concrete rigid frame (dual)	28′	Hwy. 401	Lancaster	24–25	I	Glengarry	9
Wigle Creek Bridge	Concrete rigid frame	36′-3″	Hwy. 18 Leamington–Windsor	Gosfield S.	13	I	Essex	1
Wawa Lake Drain	Concrete rigid frame, double box culvert	2 @ 12′	Hwy. 101 Town of Wawa	Town of Wawa	....	....	Algoma	18

APPENDIX No. 5

Chronological Summary of Road Expenditure and Provincial Subsidy by Counties

Year	Number of Counties	Approved Expenditure	Government Subsidy
1903	4	$ 166,149.06	$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
1961	37	31,210,823.16	17,179,416.16
1962	37	35,033,598.28	19,025,879.89
1963	37	36,470,286.63	19,784,038.11
Totals to Date	....	$551,580,009.33	$287,802,954.89

APPENDIX No. 6

COUNTY ROAD MILEAGES AND EXPENDITURES

From Inception of County Road Systems to December 31st, 1963
Provincial Subsidies on 1963 Expenditures Being Paid in the 1963-64 Fiscal Year

County	Year of Establishment of System	Road Mileages			Total Approved Expenditures to End of 1963	Total Government Grant
		County Roads	County Sub-urban	Total		
Brant	1917	63.9	61.5	125.4	$ 8,880,051.48	$ 4,760,747.48
Bruce	1917	313.0	.....	313.0	13,268,618.15	7,105,238.12
Carleton	1910	176.5	108.7	285.2	25,403,561.92	13,303,126.90
Dufferin	1918	179.2	.....	179.2	6,131,436.85	3,136,030.66
Elgin	1917	247.3	25.0	272.3	13,055,522.86	6,868,457.00
Essex	1916	209.1	53.0	262.1	22,344,507.14	11,613,198.27
Frontenac	1907	120.1	41.9	162.0	6,588,022.43	3,375,296.61
Grey	1918	335.7	34.7	370.4	14,577,772.74	7,553,291.91
Haldimand	1912	157.8	.....	157.8	12,070,511.66	6,257,902.91
Halton	1907	151.0	.....	151.0	10,022,749.51	5,097,734.82
Hastings	1904	241.0	16.2	257.2	9,817,855.78	4,949,312.56
Huron	1917	385.0	.....	385.0	15,048,207.68	8,147,582.10
Kent	1917	374.7	27.1	401.8	22,520,519.33	12,388,778.75
Lambton	1918	213.6	25.5	239.1	17,562,362.77	9,479,306.12
Lanark	1903	213.4	11.6	225.0	8,351,197.04	4,278,311.73
Leeds and Grenville	1910	297.4	35.5	332.9	11,933,225.51	5,986,060.36
Lennox and Addington	1906	168.5	.....	168.5	7,239,301.09	3,753,579.50
Lincoln	1904	113.4	46.8	160.2	13,615,819.04	6,839,801.44
Middlesex	1906	321.3	65.6	386.9	26,626,423.58	14,279,509.03
Norfolk	1917	225.4	.....	225.4	14,903,760.54	7,677,128.15
Northumberland and Durham	1918	284.3	12.7	297.0	13,855,245.76	7,191,302.19
Ontario	1918	233.8	30.7	264.5	13,357,136.35	7,048,075.42
Oxford	1904	206.8	15.5	222.3	14,579,933.80	7,573,958.70
Peel	1907	176.8	.....	176.8	21,077,688.51	11,245,702.30
Perth	1907	171.6	29.7	201.3	9,537,891.90	4,949,251.96
Peterborough	1919	140.7	46.5	187.2	7,588,556.40	4,092,317.01
Prescott and Russell	1917	322.7	.....	322.7	14,546,405.33	7,421,844.74
Prince Edward	1907	188.0	.....	188.0	7,345,604.23	3,691,155.80
Renfrew	1918	213.5	.....	213.5	11,926,709.65	6,224,647.11
Simcoe	1903	255.7	18.2	273.9	15,893,621.86	8,078,128.26
Stormont, Dundas and Glengarry	1917	381.1	61.0	442.1	16,492,048.88	8,421,624.22
Victoria	1917	228.3	.....	228.3	8,978,614.41	4,711,049.49
Waterloo	1908	100.6	117.0	217.6	17,344,488.04	9,277,630.24
Welland	1912	117.9	44.2	162.1	18,884,792.02	9,711,095.90
Wellington	1903	333.1	37.5	370.6	18,389,165.16	9,701,157.44
Wentworth	1903	.....	159.5	159.5	16,469,462.55	8,273,136.73
York	1911	.....	201.0	201.0	45,351,217.38	23,340,482.96
Totals		7,862.2	1,326.6	9,188.8	$551,580,009.33	$287,802,954.89

APPENDIX

SUMMARY OF COUNTY

(Government Subsidies Paid

Name of County	Roads		Bridges and Culverts	
	Construction	Maintenance	Construction	Maintenance
Brant	$ 221,677.73	$ 186,021.40	$ 50,877.40	$ 2,019.63
Bruce	396,168.63	193,819.41	44,457.14	3,380.59
Carleton	472,959.72	78,367.24	168,795.52	5,881.45
Carleton (Ottawa Sub.)	857,333.32	107,551.35	31,355.21	14,897.64
Dufferin	151,770.10	104,917.78	73,802.45	380.96
Elgin	419,166.69	272,850.77	73,151.71	7,375.08
Essex	816,757.37	344,026.02	83,074.64	14,533.04
Frontenac	332,786.29	142,390.75	24,196.37	1,342.83
Grey	469,107.70	295,255.42	95,920.14	6,385.76
Haldimand	443,089.06	186,832.50	452,534.48	207.15
Halton	375,586.06	282,386.90	17,545.46	5,267.37
Hastings	150,798.45	210,012.98	190,336.56	5,196.34
Huron	446,166.75	285,570.95	182,282.48	11,226.62
Kent	719,521.85	287,483.42	256,610.22	14,715.52
Lambton	1,285,594.54	253,023.24	280,903.44	2,614.52
Lanark	202,334.39	124,616.35	15,288.22	6,033.07
Leeds and Grenville	339,488.31	250,148.64	17,989.10	8,248.75
Lennox and Addington	106,967.12	110,193.94	48,126.03	1,015.16
Lincoln	308,409.26	281,917.17	69,777.40	1,821.00
Middlesex	875,821.36	439,500.68	403,311.31	4,160.47
Norfolk	619,671.14	258,446.22	101,812.11	9,898.61
Northumberland and Durham	615,572.53	235,962.05	119,282.30	2,986.91
Ontario	751,211.00	242,965.10	187,975.79	12,531.33
Oxford	505,979.55	273,320.54	137,684.69	6,559.67
Peel	1,552,364.97	294,030.42	211,632.20	21,689.39
Perth	353,019.59	134,076.48	51,265.91	22,414.17
Peterborough	227,695.17	142,061.67	60,750.06	7,922.20
Prescott and Russell	336,561.74	202,779.88	122,004.20	12,841.35
Prince Edward	242,015.98	130,144.95	30,880.32	2,962.78
Renfrew	319,347.85	237,522.53	2,114.19	10,898.94
Simcoe	617,308.78	292,652.73	216,770.15	1,927.70
Stormont, Dundas and Glengarry	216,128.33	289,133.73	131,596.14	8,159.79
Victoria	202,299.41	256,494.33	40,840.18	5,919.87
Waterloo	616,038.52	245,827.81	466,085.16	15,779.71
Welland	586,682.58	386,237.52	83,495.25	6,919.76
Wellington	317,070.94	415,009.25	159,221.69	16,478.40
Wentworth	84,532.01	407,980.82	12,809.96	7,359.95
York	1,635,916.60	277,918.27	148,800.52	7,672.91
Totals	$19,190,921.39	$ 9,159,451.21	$ 4,865,356.10	$ 297,626.39

SUMMARY OF METROPOLITAN

Metropolitan Toronto	$30,773,896.17	$ 2,487,071.25	$ 6,756,673.08	$ 149,024.73

No. 7

ROAD EXPENDITURES—1963

in 1963-1964 Fiscal Year)

Winter Control (Maintenance)	Approved Expenditure			Government Subsidy 50% and 80%
	Construction	Maintenance	Total	
$ 33,637.22	$ 272,555.13	$ 221,678.25	$ 494,233.38	$ 262,985.80
122,800.00	440,625.77	320,000.00	760,625.77	394,664.21
36,732.47	641,755.24	120,981.16	762,736.40	433,771.29
102,370.99	888,688.53	224,819.98	1,113,508.51	570,630.11
59,100.00	225,572.55	164,398.74	389,971.29	217,240.67
54,818.94	492,318.40	335,044.79	827,363.19	437,839.64
53,612.69	899,832.01	412,171.75	1,312,003.76	685,284.18
38,595.01	356,982.66	182,328.59	539,311.25	277,317.39
128,800.00	565,027.84	430,441.18	995,469.02	528,426.28
14,947.63	895,623.54	201,987.28	1,097,610.82	684,627.90
62,670.32	393,131.52	350,324.59	743,456.11	378,571.90
62,636.62	341,135.01	277,845.94	618,980.95	368,150.35
132,954.43	628,449.23	429,752.00	1,058,201.23	587,153.34
34,478.87	976,132.07	336,677.81	1,312,809.88	737,802.66
31,017.98	1,566,497.98	286,655.74	1,853,153.72	1,011,632.25
67,917.67	217,622.61	198,567.09	416,189.70	214,491.24
75,971.10	357,477.41	334,368.49	691,845.90	353,794.31
42,316.26	155,093.15	153,525.36	308,618.51	169,051.62
60,173.40	378,186.66	343,911.57	722,098.23	382,528.63
77,241.94	1,279,132.67	520,903.09	1,800,035.76	1,022,259.41
82,991.73	721,483.25	351,336.56	1,072,819.81	569,923.13
75,569.31	734,854.83	314,518.27	1,049,373.10	561,367.31
92,261.89	939,186.79	347,758.32	1,286,945.11	703,624.70
50,007.84	643,664.24	329,888.05	973,552.29	530,049.46
80,260.43	1,763,997.17	395,980.24	2,159,977.41	1,149,985.18
29,689.26	404,285.50	186,179.91	590,465.41	317,336.72
33,181.27	288,445.23	183,165.14	471,610.37	256,406.87
76,475.79	458,565.94	292,097.02	750,662.96	415,785.15
46,338.01	272,896.30	179,445.74	452,342.04	236,323.95
46,022.70	321,462.04	294,444.17	615,906.21	311,857.05
97,829.68	834,078.93	392,410.11	1,226,489.04	678,853.88
101,949.56	347,724.47	399,243.08	746,967.55	415,410.56
68,814.88	243,139.59	331,229.08	574,368.67	301,212.36
74,640.66	1,082,123.68	336,248.18	1,418,371.86	853,745.39
148,862.12	670,177.83	542,019.40	1,212,197.23	633,223.11
122,520.79	476,292.63	554,008.44	1,030,301.07	567,860.56
128,231.83	97,341.97	543,572.60	640,914.57	326,508.25
308,490.25	1,784,717.12	594,081.43	2,378,798.55	1,236,341.30
$2,956,931.54	$24,056,277.49	$12,414,009.14	$36,470,286.63	$19,784,038.11

ROAD EXPENDITURES—1963

$1,340,986.10	$37,530,569.25	$ 3,977,082.08	$41,507,651.33	$20,753,825.66

APPENDIX No. 8
INCORPORATED TOWNSHIPS
Chronological Summary of Road Expenditure and Provincial Subsidy Including Improvement Districts and Indian Reserves

Year	No. of Townships	Approved Expenditure	Subsidy
1920 to 1934	172–352	$ 58,408,281.44	$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
1961	632	44,505,542.38	24,919,087.33
1962	633	46,022,546.96	26,082,619.19
1963	634	51,317,254.17	29,923,461.38
	Totals.....	$616,784,938.73	$331,282,889.43

Note: — 574 Townships, 19 Improvement Districts and 41 Indian Reserves are represented in the above expenditures for 1963.

APPENDIX No. 9
CITIES, TOWNS AND VILLAGES
Chronological Summary of Road Expenditures and Provincial Subsidy

Year	No. of Urban Municipalities	Approved Expenditure	Subsidy
1947	324	$ 5,334,316.72	$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
1961	341	37,130,872.81	14,862,154.63
1962	345	40,193,137.14	15,903,508.14
1963	346	44,397,369.60	17,580,312.26
	Totals.....	$397,103,088.12	$156,348,291.51

Note: — 32 Cities, 7 Separated Towns, 150 Towns and 157 Villages are represented in the above expenditure for 1963.

APPENDIX No. 10

MILEAGE OF URBAN ROAD SURFACES AT THE END OF 1963
ROADS UNDER LOCAL AUTHORITY

Counties	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bitumi-nous	Asphalt Con-crete	Cement Con-crete	Other	Total
Brant	2.5	2.5	8.0	113.5	38.0	22.4	.....	186.9
Bruce	6.5	3.8	56.0	48.9	13.4	.....	.....	128.6
Carleton	3.6	15.6	69.4	172.5	279.6	2.0	.....	542.7
Dufferin	0.9	0.3	14.7	2.0	4.0	1.7	.....	23.6
Elgin	8.1	0.4	36.2	38.5	39.4	1.1	1.1	124.8
Essex	3.0	21.1	72.9	46.9	96.2	263.1	2.7	505.9
Frontenac	0.3	.....	1.0	16.4	74.8	0.2	.....	92.7
Grey	0.5	28.8	36.9	68.9	8.7	2.0	.....	145.8
Haldimand	2.5	4.9	20.1	23.6	10.4	1.2	.....	62.7
Halton	7.2	14.7	173.6	216.3	133.8	4.8	.....	550.4
Hastings	0.5	0.3	34.2	62.1	31.0	0.2	.....	128.3
Huron	1.3	0.2	45.2	38.3	23.1	0.7	.....	108.8
Kent	7.1	1.0	45.8	10.8	129.6	9.7	.....	204.0
Lambton	.....	4.5	49.8	113.7	70.4	5.1	.....	243.5
Lanark	26.3	0.3	30.7	30.0	24.7	0.8	.....	112.8
Lennox-Addington	0.2	.....	7.2	10.2	5.2	.....	.....	22.8
Leeds-Grenville	2.0	0.9	16.1	33.5	61.6	4.5	.....	118.6
Lincoln	3.4	6.8	27.6	200.6	79.5	55.1	.....	373.0
Middlesex	10.2	1.3	102.8	223.8	167.4	1.7	.....	507.2
Norfolk	3.8	.....	5.5	42.1	15.4	1.1	.....	67.9
Northumberland and Durham	7.5	1.6	46.2	85.6	65.3	4.5	.....	210.7
Ontario	18.5	0.3	89.1	78.9	128.1	.....	.....	314.9
Oxford	4.2	4.1	24.8	87.4	12.8	3.3	0.4	137.0
Peel	0.9	1.4	24.1	30.3	48.2	0.7	.....	105.6
Perth	11.6	7.3	55.3	42.6	37.9	0.7	.....	155.4
Peterborough	9.7	0.1	40.0	71.5	49.4	7.3	.....	178.0
Prescott-Russell	6.9	4.2	8.9	17.5	10.4	.....	.....	47.9
Prince Edward	.....	0.1	1.6	5.8	10.4	0.5	.....	18.4
Renfrew	5.5	0.9	51.2	26.0	59.2	0.2	.....	143.0
Simcoe	7.4	16.7	81.0	110.1	87.2	7.2	.....	309.6
Stormont, Dundas and Glengarry	3.1	.....	37.9	39.7	22.8	43.8	18.9	166.2
Victoria	15.6	.....	45.5	1.8	16.6	.....	.....	79.5
Waterloo	17.5	16.0	48.9	191.3	143.1	7.8	36.6	461.2
Welland	11.3	8.5	46.0	269.4	136.0	14.1	.....	485.3
Wellington	13.8	1.5	33.5	102.6	70.0	3.8	.....	225.2
Wentworth	3.2	1.7	45.9	139.1	342.1	1.6	.....	533.6
York	0.3	3.3	24.0	48.2	52.1	.....	.....	127.9
Totals—Counties	226.9	175.1	1,557.6	2,860.4	2,597.8	472.9	59.7	7,950.4
Metro. Tor. Area	1.1	.....	9.9	4.2	566.6	7.5	15.0	604.3
Districts								
Algoma	30.0	0.1	57.2	6.1	77.8	2.4	0.1	173.7
Cochrane	25.5	0.7	36.1	36.7	33.8	.....	.....	132.8
Kenora	.....	.....	50.4	2.7	24.9	.....	.....	78.0
Manitoulin	3.1	.....	15.3	1.1	.....	.....	.....	19.5
Muskoka	18.0	0.4	45.4	25.5	11.6	.....	.....	100.9
Nipissing	24.1	8.7	52.4	11.9	37.8	.....	.....	134.9
Parry Sound	29.5	0.6	36.1	3.2	19.8	.....	.....	89.2
Rainy River	.....	0.3	34.7	5.5	7.7	0.4	.....	48.6
Sudbury	16.0	5.5	110.1	63.3	96.1	1.6	.....	292.6
Temiskaming	.....	.....	28.7	1.7	14.3	.....	.....	44.7
Thunder Bay	.....	.....	95.3	45.9	102.2	1.2	.....	244.6
Totals—Districts	146.2	16.3	561.7	203.6	426.0	5.6	0.1	1,359.5
Grand Totals	374.2	191.4	2,129.2	3,068.2	3,590.4	486.0	74.8	9,914.2

APPENDIX

MILEAGE OF ROAD SURFACES

Counties	COUNTY ROADS						
	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bituminous Surface	Asphalt Concrete	Cement Concrete	Other
Brant	.....	.....	19.7	105.3	0.4	.....	.....
Bruce	.....	.....	121.6	128.2	62.6	0.6	.....
Carleton	.....	.....	22.5	256.2	6.5	.....	.....
Dufferin	.....	.....	153.7	3.1	22.2	0.2	.....
Elgin	0.3	.....	98.8	163.9	9.3	.....	.....
Essex	.....	.....	80.7	79.0	90.3	11.4	0.7
Frontenac	.....	.....	55.8	96.6	9.6	.....	.....
Grey	.....	.....	269.2	86.2	13.6	1.4	.....
Haldimand	.....	.....	29.6	128.2	.....	.....	.....
Halton	.....	.....	34.2	70.3	46.5	.....	.....
Hastings	.....	.....	163.4	78.1	13.6	2.1	.....
Huron	.....	.....	211.7	132.6	40.7	.....	.....
Kent	0.3	0.2	43.6	19.8	330.0	7.9	.....
Lambton	.....	.....	72.4	61.8	97.4	0.1	7.4
Lanark	.....	.....	113.0	111.6	0.4	.....	.....
Lennox-Addington	.....	.....	21.1	142.1	5.3	.....	.....
Leeds-Grenville	.....	.....	144.3	186.6	0.8	1.2	.....
Lincoln	0.9	.....	14.2	135.3	9.8	.....	.....
Middlesex	.....	.....	94.6	125.5	152.2	14.6	.....
Norfolk	.....	.....	7.3	215.7	1.3	1.1	.....
Northumberland-Durham	.....	.....	87.7	164.8	44.5	.....	.....
Ontario	.....	.....	90.0	96.7	77.8	.....	.....
Oxford	.....	.....	63.6	104.2	41.9	12.6	.....
Peel	.....	.....	38.3	54.5	83.1	0.9	.....
Perth	.....	.....	61.2	93.4	46.7	.....	.....
Peterborough	.....	.....	108.8	42.4	36.0	.....	.....
Prescott-Russell	.....	.....	161.0	145.9	15.8	.....	.....
Prince Edward	.....	.....	46.4	117.3	24.3	.....	.....
Renfrew	.....	.....	56.3	7.4	149.8	.....	.....
Simcoe	.....	.....	148.9	27.0	98.0	.....	.....
Stormont-Dundas-Glengarry	.....	.....	136.3	266.9	38.3	0.6	.....
Victoria	.....	.....	117.9	81.0	29.4	.....	.....
Waterloo	.....	.....	23.5	144.5	48.6	1.0	.....
Welland	2.5	.....	7.0	106.7	45.9	.....	.....
Wellington	.....	.....	159.0	104.9	106.3	0.4	.....
Wentworth	.....	.....	2.5	157.0	.....	.....	.....
York	.....	.....	21.2	26.4	153.4	.....	.....
Totals — Counties	4.0	0.2	3,101.0	4,067.1	1,952.3	56.1	8.1
							METROPOLITAN
Metro. Toronto Area	4.0	.....	2.3	5.5	336.2	8.3	.....
Districts							
Algoma	.....	.....	.....	.....	.....	.....	.....
Cochrane	.....	.....	.....	.....	.....	.....	.....
Haliburton	.....	.....	.....	.....	.....	.....	.....
Kenora	.....	.....	.....	.....	.....	.....	.....
Manitoulin	.....	.....	.....	.....	.....	.....	.....
Muskoka	.....	.....	.....	.....	.....	.....	.....
Nipissing	.....	.....	.....	.....	.....	.....	.....
Parry Sound	.....	.....	.....	.....	.....	.....	.....
Rainy River	.....	.....	.....	.....	.....	.....	.....
Sudbury	.....	.....	.....	.....	.....	.....	.....
Temiskaming	.....	.....	.....	.....	.....	.....	.....
Thunder Bay	.....	.....	.....	.....	.....	.....	.....
Total - Districts	.....	.....	.....	.....	.....	.....	.....
Unorganized Townships	.....	.....	.....	.....	.....	.....	.....
Grand Totals	8.0	0.2	3,103.3	4,072.6	2,288.5	64.4	8.1

No. 11

AT THE END OF 1963

Total	INCORPORATED—TOWNSHIP ROADS							
	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bituminous Surface	Asphalt Concrete	Cement Concrete	Other	Total
125.4	12.3	12.7	464.5	50.3	.....	.....	.....	539.8
313.0	78.6	96.6	1,616.6	30.0	4.2	.....	.....	1,826.0
285.2	41.7	66.3	845.7	47.4	.....	.....	.....	1,001.1
179.2	31.9	22.1	695.4	.....	0.3	.....	.....	749.7
272.3	27.3	41.6	802.8	6.8	2.3	0.5	.....	881.3
262.1	1.3	20.5	817.6	103.4	54.7	38.2	.....	1,035.7
162.0	158.4	81.4	901.4	33.4	8.6	.....	.....	1,183.2
370.4	140.0	112.0	1,943.1	11.8	4.8	0.5	.....	2,212.2
157.8	23.8	50.5	466.2	71.8	7.5	1.0	.....	620.8
151.0	11.5	2.0	210.1	.....	1.5	.....	.....	225.1
257.2	260.7	210.4	1,322.3	35.7	3.2	.....	.....	1,832.3
385.0	23.3	28.8	1,455.3	10.8	15.3	.....	.....	1,533.5
401.8	1.9	17.4	1,177.1	2.2	23.7	0.4	1.0	1,223.7
239.1	7.2	132.2	1,242.7	62.1	1.2	.....	7.3	1,452.7
225.0	51.6	89.1	843.7	27.5	.....	.....	.....	1,011.9
168.5	150.3	68.6	539.8	31.9	0.2	.....	.....	790.8
332.9	224.1	116.5	970.1	75.2	11.2	0.9	.....	1,398.0
160.2	79.6	77.1	424.1	73.1	0.4	0.9	.....	655.2
386.9	40.7	25.4	1,563.3	16.3	14.6	0.5	.....	1,660.8
225.4	29.1	105.8	570.3	196.2	17.5	.....	.....	918.9
297.0	485.3	215.1	1,757.5	126.5	13.2	.....	.....	2,597.6
264.5	157.7	31.9	985.6	42.1	62.6	.....	.....	1,279.9
222.3	10.7	5.0	991.0	15.0	34.1	.....	.....	1,055.8
176.8	32.7	9.6	481.6	148.2	98.4	.....	.....	770.5
201.3	20.5	6.6	1,012.1	2.1	1.2	.....	.....	1,042.5
187.2	53.2	40.5	872.0	18.1	6.1	.....	.....	989.9
322.7	54.4	230.0	715.5	7.7	.....	.....	.....	1,007.6
188.0	9.4	7.5	388.0	4.9	3.4	1.2	.....	414.4
213.5	201.2	327.6	1,296.1	.....	19.7	.....	.....	1,844.6
273.9	146.0	46.5	2,003.2	87.2	62.3	.....	.....	2,345.2
442.1	48.5	110.3	1,080.3	26.7	14.7	.....	.....	1,280.5
228.3	41.0	32.7	870.7	8.1	.....	.....	.....	952.5
217.6	2.1	1.7	539.3	52.3	3.4	0.9	0.7	600.4
162.1	186.0	138.8	445.4	273.6	27.3	1.2	.....	1,072.3
370.6	50.7	26.7	1,082.6	15.9	6.8	0.2	.....	1,182.9
159.5	40.5	22.4	433.9	55.6	.....	.....	.....	552.4
201.0	58.5	5.2	718.0	63.2	86.6	.....	.....	931.5
9,188.8	2,993.7	2,635.1	34,544.9	1,833.1	611.0	46.4	9.0	42,673.2
ROADS								
356.3	128.8	49.2	115.6	463.6	820.7	104.9	.....	1,682.8
	114.2	79.9	699.0	10.2	105.1	2.4	0.1	1,010.9
.....	131.3	47.6	534.0	17.3	7.5	.....	.....	737.7
.....	27.1	25.0	419.4	58.0	0.4	.....	.....	529.9
	1.9	1.5	219.9	.....	.....	.....	.....	223.3
	26.3	51.0	498.1	.....	.....	.....	.....	575.4
	103.2	82.2	634.4	128.2	1.9	.....	.....	949.9
	85.5	63.8	454.7	11.9	19.8	.....	.....	635.7
	196.0	47.7	857.9	38.8	12.0	.....	.....	1,152.4
	38.2	44.3	518.3	1.1	.....	.....	.....	601.9
	53.4	99.0	609.1	7.3	26.5	0.3	40.1	835.7
	66.5	34.5	535.1	7.8	31.7	.....	.....	675.6
	56.5	30.8	579.4	84.0	42.4	.....	.....	793.1
	900.1	607.3	6,559.3	364.6	247.3	2.7	40.2	8,721.5
	480.8	565.8	3,637.3	12.1	1.1	.....	.....	4,697.1
9,545.1	4,503.4	3,857.4	44,857.1	2,673.4	1,680.1	154.0	49.2	57,774.6

APPENDIX No. 12

SUMMARY OF EXPENDITURES ON URBAN STREETS—1963

Approved 1963 Expenditures by Cities, Towns and Villages under Part X of the Highway Improvement Act

Municipal Road District No.	Approved Expenditures — 1963				Government Subsidy 33⅓%, 50% and 80%
	Cities (32) Sep. Towns (7)	Towns (150)	Villages (157)	Urban Total (346)	
1	$ 2,625,560.31	$ 450,298.32	$ 119,080.03	$ 3,194,938.66	$ 1,162,974.63
2	3,232,501.77	390,974.88	130,216.51	3,753,693.16	1,582,988.92
3	2,010,998.30	666,162.36	124,719.46	2,801,880.12	1,068,721.40
4	6,348,813.12	1,023,771.57	139,248.01	7,511,832.70	2,878,344.05
5	170,100.00	283,357.40	116,864.03	570,321.43	269,859.83
6	603,070.08	3,211,680.83	342,705.99	4,157,456.90	2,057,775.49
6 M.T.A.	4,832,856.82	588,917.86	201,486.35	5,623,261.13	2,006,353.32
7	2,158,752.24	727,518.27	154,578.55	3,040,849.06	1,168,958.60
8	1,201,151.22	61,473.88	77,030.13	1,339,655.23	488,926.37
9	5,025,500.86	281,196.26	188,138.07	5,494,835.19	1,913,110.12
10	.....	374,667.62	154,252.26	528,919.88	273,630.15
11	.....	253,592.65	70,604.56	324,197.21	165,350.50
12	.....	62,225.95	27,269.31	89,495.26	45,831.58
13	202,031.41	149,488.32	4,000.00	355,519.73	145,303.60
14	.....	556,303.64	1,066.90	557,370.54	280,380.74
16	.....	194,483.18	.....	194,483.18	97,839.38
17	1,408,683.02	436,799.32	.....	1,845,482.34	834,318.46
18	783,128.45	79,788.26	4,779.50	867,696.21	304,298.62
19	1,459,118.36	26,838.63	.....	1,485,956.99	499,993.60
20	.....	659,524.68	.....	659,524.68	335,712.90
Totals.....	$32,062,265.96	$10,479,063.98	$ 1,856,039.66	$44,397,369.60	$17,580,312.26

APPENDIX No. 13

TYPES OF SURFACE ON THE KING'S HIGHWAYS

As of March 31, 1964

County or District	Concrete	High Class Bituminous	Low Class Bituminous	Gravel	Total
Algoma	.....	310.2	119.1	44.6	473.9
Brant	15.8	57.0	9.6	.....	82.4
Bruce	5.5	124.8	25.8	11.8	167.9
Carleton	4.9	126.3	.....	.....	131.2
Cochrane	.....	308.6	87.8	14.9	411.3
Dufferin	0.8	71.1	1.0	0.5	73.4
Elgin	43.3	102.9	.....	.....	146.2
Essex	48.7	151.0	25.4	.....	225.1
Frontenac	5.0	127.3	47.0	.....	179.3
Grey	4.9	138.8	.....	11.0	154.7
Haldimand	.....	72.4	2.3	.....	74.7
Haliburton	.....	50.1	75.8	.....	125.9
Halton	17.0	92.2	.....	.....	109.2
Hastings	4.8	142.8	96.1	.....	243.7
Huron	.....	204.3	.....	.....	204.3
Kenora	.....	294.3	45.5	166.5	506.3
Kent	53.1	159.1	.....	.....	212.2
Lambton	28.8	158.2	0.3	6.5	193.8
Lanark	.....	98.6	10.2	4.9	113.7
Leeds and Grenville	28.8	208.2	15.8	.....	252.8
Lennox and Addington	20.7	76.6	47.9	1.5	146.7
Lincoln	7.4	73.4	.....	.....	80.8
Manitoulin	.....	.....	23.4	30.2	53.6
Middlesex	14.6	198.8	.....	16.3	229.7
Muskoka	.....	141.1	48.2	.....	189.3
Nipissing	9.7	200.8	108.7	52.6	371.8
Norfolk	.....	74.5	23.5	.....	98.0
Northumberland and Durham	.....	253.3	15.2	4.8	273.3
Ontario	11.7	114.2	15.0	.....	140.9
Oxford	8.3	127.0	.....	10.7	146.0
Parry Sound	.....	136.9	45.5	10.4	192.8
Peel	11.1	95.5	11.4	7.3	125.3
Perth	.....	130.6	.....	.....	130.6
Peterborough	6.6	73.1	29.0	19.1	127.8
Prescott and Russell	.....	104.8	2.0	.....	106.8
Prince Edward	.....	55.4	12.0	.....	67.4
Rainy River	.....	74.6	50.8	10.0	135.4
Renfrew	.....	180.8	94.2	24.8	299.8
Simcoe	5.8	299.3	7.9	4.3	317.3
Stormont, Dundas and Glengarry	34.0	159.8	11.0	.....	204.8
Sudbury	1.4	160.3	26.9	212.2	400.8
Temiskaming	.....	154.8	97.5	21.0	273.3
Thunder Bay	.....	612.9	20.9	21.7	655.5
Victoria	.....	127.1	38.0	8.2	173.3
Waterloo	10.3	78.3	2.1	8.5	99.2
Welland	30.0	83.2	1.3	.....	114.5
Wellington	10.4	140.0	5.8	7.9	164.1
Wentworth	2.1	128.2	26.9	.....	157.2
York	4.4	161.8	25.2	.....	191.4
Totals	449.9	7,215.3	1,352.0	732.2	9,749.4

APPENDIX No. 13A

SUMMARY OF KING'S HIGHWAY MILEAGE BY HIGHWAY DISTRICTS

As of March 31, 1964

District	Concrete	High Class Bituminous	Low Class Bituminous	Gravel	Total
Chatham	130.6	466.6	25.4	4.9	627.5
London	90.6	497.3	23.5	17.9	629.3
Stratford	6.7	555.0	8.2	34.9	604.8
Hamilton	53.9	503.3	40.1	.....	597.3
Owen Sound	17.0	475.1	27.6	27.1	546.8
Toronto	35.2	379.9	58.7	.....	473.8
Port Hope	6.6	579.0	72.1	32.1	689.8
Kingston	52.3	502.2	89.4	6.4	650.3
Ottawa	45.9	550.0	39.0	.....	634.9
Bancroft	.....	110.4	287.1	25.8	423.3
Huntsville	.....	358.4	139.1	10.4	507.9
North Bay	9.7	304.0	80.3	66.1	460.1
New Liskeard	.....	220.7	178.8	78.4	477.9
Cochrane	.....	289.9	12.2	14.9	317.0
Sudbury	1.4	248.0	34.2	79.0	362.6
Sault Ste. Marie	.....	295.3	119.1	136.1	550.5
Fort William	.....	545.4	20.9	31.7	598.0
Kenora	.....	334.8	96.3	166.5	597.6
Totals	449.9	7,215.3	1,352.0	732.2	9,749.4

APPENDIX No. 13B

SUMMARY OF SECONDARY HIGHWAY MILEAGE BY HIGHWAY DISTRICTS

As of March 31, 1964

District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
Port Hope	.....	41.1	55.9	.....	97.0
Kingston	8.7	6.3	6.8	.....	21.8
Ottawa	.....	44.5	.....	.....	44.5
Bancroft	7.2	64.2	126.2	.....	197.6
Huntsville	19.4	203.3	125.8	.....	348.5
North Bay	.....	71.1	121.3	.....	192.4
New Liskeard	7.9	74.8	272.0	.....	354.7
Cochrane	.....	3.1	144.6	.....	147.7
Sudbury	73.0	49.2	292.1	.....	414.3
Sault Ste. Marie	14.6	34.4	195.8	.....	244.8
Fort William	11.8	25.9	403.2	2.4	443.3
Kenora	8.8	8.2	335.7	.....	352.7
Totals	151.4	626.1	2,079.4	2.4	2,859.3

APPENDIX No. 13C

TYPES OF SURFACE ON SECONDARY HIGHWAYS

As of March 31, 1964

County or District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
Algoma	9.4	35.2	270.1	.....	314.7
Cochrane	0.7	37.2	113.7	.....	151.6
Frontenac	.....	10.3	24.9	.....	35.2
Haliburton	6.1	52.6	45.7	.....	104.4
Hastings	2.5	15.8	22.6	.....	40.9
Kenora	8.8	8.2	156.3	.....	173.3
Lanark	.....	14.0	.....	.....	14.0
Lennox and Addington	6.2	.....	6.5	.....	12.7
Manitoulin	.....	40.4	127.3	.....	167.7
Muskoka	7.7	67.7	18.9	.....	94.3
Nipissing	.....	22.5	71.4	.....	93.9
Parry Sound	.....	116.5	102.2	.....	218.7
Peterborough	.....	32.0	38.7	.....	70.7
Rainy River	.....	10.5	217.3	.....	227.8
Renfrew	7.2	60.9	50.3	.....	118.4
Sudbury	73.0	19.1	193.8	.....	285.9
Temiskaming	7.2	40.7	163.6	.....	211.5
Thunder Bay	17.0	15.4	421.7	2.4	456.5
Victoria	5.6	27.1	34.4	.....	67.1
Totals	151.4	626.1	2,079.4	2.4	2,859.3

APPENDIX No. 13D

TYPES OF SURFACE ON TERTIARY ROADS

As of March 31, 1964

County or District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
Kenora	.....	.....	12.8	.....	12.8
Nipissing	.....	.....	35.0	.....	35.0
Thunder Bay	.....	.....	71.3	.....	71.3
Totals	.....	.....	119.1		119.1

APPENDIX No. 13E

SUMMARY OF TERTIARY ROAD MILEAGES BY HIGHWAY DISTRICTS

As of March 31, 1964

District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
North Bay	.....	.....	35.0	.....	35.0
Fort William	.....	.....	71.3	.....	71.3
Kenora	.....	.....	12.8	.....	12.8
Totals	.....	.....	119.1	.....	119.1

APPENDIX No. 13F

ROAD MILEAGES IN ONTARIO

As of March 31, 1964

	Total Miles	Type of Pavement					
		Concrete	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
King's Hwys.	9,749.4	449.9	7,215.3	1,352.0	732.2	.....	9,749.4
Secondary Hwys.	2,859.3	.....	151.4	626.1	2,079.4	2.4	2,859.3
Tertiary Roads	119.1	.....	.....	.....	119.1	.....	119.1
Totals	12,727.8	449.9	7,366.7	1,978.1	2,930.7	2.4	12,727.8

APPENDIX No. 14

DEVELOPMENT ROAD EXPENDITURES IN MUNICIPALITIES—1963

(Authorized by Part XI of the Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1963-64
34R	Dillon Cove Road	10.00	Carling	Parry Sound	$ 14,547.85
57R	Centreville Enterprise Road	5.00	Camden East	Lennox and Addington	28,771.42
100R	Providence Bay Tehkummah Road	14.00	Carnarvon and Tehkummah	Manitoulin	31,134.57
117R	Combermere Rockingham	6.80	Radcliffe	Renfrew	15,580.39
170	Perth Road (part)	17.65	County	Frontenac	212,198.32
178R	French Line Road	5.00	Darling	Lanark	8,218.65
202R	Champlain Road	4.00	Tiny	Simcoe	170,084.14
216R	Oro Medonte Townline	7.00	Oro and Medonte	Simcoe	52,348.25
278R	Houghton Bay Road	4.80	Bastard and Burgess South	Leeds and Grenville	10,884.69
285R	Escott Rockport Road	5.70	Escott Front	Leeds and Grenville	9,066.94
287R	Swamp Road	5.90	Nepean	Carleton	86.60Cr
289	Mass Road–County Road No. 8 (part)	12.20	County	Frontenac	23,309.83
311R	McKnight Road	2.50	Hinchinbrooke	Frontenac	37,060.70
313	Centre Line Road	4.00	Plummer Additional	Algoma	23,419.40
323	Lanark Elphin Road	16.00	County	Lanark	32,116.71
361	Westport Bedford Mills Road	5.30	County	Leeds and Grenville	148.78
407R	John Street Road	7.50	Shuniah (McIntyre)	Thunder Bay	2,000.00
409	Rousseau Huntsville Road	9.50	Cardwell	Muskoka	11,043.31
415	Snow Road–Ompah	15.00	Palmerston and North and South Canonto	Frontenac	123,077.18
450	Lilly's Corners–Lynhurst	4.80	County	Leeds and Grenville	1,356.34
460	Ridge Road in Rawdon	5.00	County	Hastings	7,835.39
462R	Concession XII XIII Road	3.25	South Himsworth	Parry Sound	80,943.69
467	Brackenrig Road	6.00	Watt	Muskoka	10,394.63
471	Alvinston–Courtright Road	30.75	County	Lambton	295,345.23
473	Balsam Road	3.00	Hagerman	Parry Sound	18,923.47
483	Goodfish Road	6.00	Teck	Cochrane	7,557.24
491	Flesherton Singhampton Road	15.80	County	Grey	121,755.33
495	Moryanston Cuff's Corners	11.00	County	Northumberland and Durham	5,864.46
498	Spanish River Bridge	.30	Salter, May, Harrow, Town of Massey	Sudbury	5,227.68
518	Bannockburn Cooper Road	4.50	Madoc	Hastings	1,807.74
521R	15th Sideroad	9.50	Flos	Simcoe	8,821.45
524	McGarth–Contarf Road	8.00	Gratton and Sebastopol	Renfrew	5,058.70
528	Sulphide–Tweed Road	5.30	County	Hastings	89,007.12
530	River Road	6.00	Salter, May, Harrow	Sudbury	52,332.08
531	Heart Lake Road	4.50	Chinguacousy	Peel	123,762.15
534	Manchester–Goodwood Road	12.70	County	Ontario	45,614.10
535	Hay Bay Road	6.00	South Fredricksburg	Lennox and Addington	23,185.02
539	Hastings–Keene	12.50	County	Peterborough	169,822.51
541	Admaston–Bagot Townline	10.40	Admaston and Bagot	Renfrew	117,338.42
543	Concession VI VII	1.50	Williamsburgh	Dundas	7,290.76
545	Seoharie Road	9.30	County	Prince Edward	40,118.33
548	Plevna–Ompah Road	6.70	Clarendon and Miller	Frontenac	16,029.55
550	Sideroad 15 16	5.00	Wollaston	Hastings	56,382.16
557	Parham–Wagarville Road	4.40	Hinchinbrooke	Frontenac	6,308.06
559	Concession IV V	4.50	Lochiel	Stormont, Dundas and Glengarry	32,772.91
560R	Hillside Road	3.30	Shuniah (McIntyre)	Thunder Bay	18,981.98
563	Webbwood Bridge and approaches	0.14	Hallam	Sudbury	63,978.76

(Authorized by Part XI of the Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1963-64
569	Madoc Boundary West Con. VI	6.00	Marmora and Lake	Hastings	1,826.35
572	Warburton Long Point	6.00	County	Leeds and Grenville	98,529.50
573	County Road No. 21	9.70	County	Stormont, Dundas and Glengarry	117,442.18
578	Port Cunnington Road	4.50	Franklin	Muskoka	55,206.07
580	Gooderham–Haliburton	11.10	Dysart et al. and Glamorgan	Haliburton	169,026.81
581	Essa–Innisfil Townline	4.20	Essa and Innisfil	Simcoe	107,938.51
585	County Road No. 39 (part)	1.00	County	Elgin	845.71
586	Germanicus Road	4.75	Wilberforce	Renfrew	3,371.28
587R	Havelock Rush Point	17.70	Belmont and Methuen	Peterborough	13,122.62
588	County Road No. 1 (part)	14.20	County	Hastings	407,538.43
589	Concession III IV Road (part)	1.20	Rawdon	Hastings	20,018.68
590	Wilson Vennacher Road (part)	2.80	Clarence, Miller, Griffith & Matawachan	Renfrew	9,798.34
592	Highway 62 Locksley	5.70	Alice and Fraser	Renfrew	62,539.28
593	Wilson–Vennacher Road (part)	4.50	Denbigh, Abinger and Ashby	Lennox and Addington	13,475.88
594	Huntsville–Rousseau (part)	8.00	Stisted and Stephenson	Muskoka	146,677.50
599	Concession IV, V Road (part)	2.10	Thurlow	Hastings	16,869.45
602	Rose Corners–Cambridge Boundary	3.60	County	Prescott and Russell	62,971.35
604	Middle River Road (part)	2.50	McKellar	Parry Sound	22,211.70
606	Vermilion Bridge Westerly	3.50	Balfour	Sudbury	38,075.72
607	Victoria Road	.70	Calvert	Cochrane	19,282.44
608	Wilno Radcliffe Boundary	2.70	Hagarty, Richards, Sherwood, etc.	Renfrew	51,529.47
609	Hornings Mills–Terra Nova (part)	7.10	Mulmur	Dufferin	75,875.09
610	Hornings Mills Bridge	0.90	Melancthon	Dufferin	25,474.71
613	Fallbrook Westerly	8.00	Bathurst	Lanark	16,868.32
615	Brightside–Hopetown Road	3.80	County	Lanark	93,177.26
618	County Road No. 3	12.00	County	Dufferin	305,102.33
619	Concession II/III Road	5.30	Chamberlain	Temiskaming	2,135.06
620	Genier Road	12.50	Glackmeyer	Cochrane	2,496.00
621	Vars–Osgoode Twp. Boundary	4.50	Cumberland	Prescott and Russell	57,771.07
622	Innisville Easterly Road	3.00	Drummond	Lanark	45,456.45
623	Bulger's Corner 5th Line	2.50	Bromley	Renfrew	829.33
624	Maplewood Avenue	5.30	Shuniah (McIntyre)	Thunder Bay	111,931.74
625	Burritt's Rapids County Road 26	5.80	Marlborough	Carleton	66,914.02
627	Concession I/II Road	1.20	Nassagaweya	Halton	36,326.38
628	Montee–Rouleau Road	2.75	Rayside	Sudbury	12,102.36
629	Concession VI/VII Road	2.50	Bonfield	Nipissing	1,476.90
631	Cormac–Rochefort Road	4.50	South Algoma	Renfrew	361.40
635	County Road No. 2 (part)	0.70	County	Haldimand	1,434.45
636	Malwood County Road No. 20	1.75	March	Carleton	5,785.84
637	County Road No. 65	2.50	Erin	Wellington	94,068.01
638	Sideroad 5/6	6.00	West Gwillimbury	Simcoe	215,799.71
639	Morley/Shenston Townline	7.00	Morley	Rainy River	46,192.38
640	County Road No. 4 (part)	2.30	County	Lennox and Addington	34,181.78
641	Strong–Machar Townline	1.50	Strong and Machar	Parry Sound	14,247.94
642	County Road No. 16 (part)	8.50	County	Leeds and Grenville	36,459.65
644	12 Mile Bay Road	8.00	Freeman	Muskoka	64,187.49
645	Domville Easterly	0.80	Augusta	Leeds and Grenville	20,691.51
646	Bellrock Road	6.10	County	Frontenac	384,243.98
647	Cockshutt Road	5.60	County	Brant	511,740.97
648	Fitzroy Station Road	3.95	Fitzroy	Carleton	122,737.02
649	Musclow–Greenview Road	2.80	Monteagle	Hastings	98,224.84
650	County Road No. 13 (part)	5.00	County	Prescott and Russell	166,085.32

651	Highway 16–County Road 18	4.50	Oxford-on-Rideau	Leeds and Grenville	$ 96,304.72
652	25th Sideroad (Townline)	1.10	Paipoonge and Neebing	Thunder Bay	30,092.29
654	Second Line Road	6.65	Sherbrooke South	Lanark	20,094.14
655	Crow Lake Easterly	4.00	Oso	Frontenac	106,355.41
656	Caderette Corners–Highway No. 64	4.15	Caldwell	Nipissing	149,390.82
657	Minden Bay Road	3.75	Sherborne et al	Haliburton	56,328.41
658	Carnavon–Quinn's Corners	3.00	Minden and Stanhope	Haliburton	25,197.33
659	Ninth Line Road	12.00	Dummer	Peterborough	19,112.59
660	Harley–Hilliard Townline	3.00	Harley and Hilliard	Temiskaming	17,388.71
662	Casselman Westerly Road	1.50	County	Prescott and Russell	23,346.24
663	Casselman Easterly Road	3.90	County	Prescott and Russell	73,179.25
664	Miller Road (part)	3.50	Chapman	Parry Sound	35,152.15
666	Sixth Line Road	8.00	Douro	Peterborough	48,679.94
667	Seeley–Brunel Road	3.70	Brunel	Muskoka	54,515.86
668	Panmure–Highway No. 44	4.50	Huntley	Carleton	140,548.80
669	Brussels–Highway No. 86	6.25	County	Huron	172,299.91
670	Seaforth–Brussels	15.00	County	Huron	386,830.90
671	Black Bridge–Mathasville	3.25	Draper	Muskoka	21,196.11
672	Provost Corners Northerly	3.50	Marmora and Lake	Hastings	87,972.31
673	Concession II Road	1.50	Cramache	Northumberland and Durham	6,701.17
674	Hanover–Chesley	9.00	County	Bruce	191,090.75
675	Otter Lake Northerly	2.70	Loughborough	Frontenac	41,719.34
676	River Road	13.80	County	Renfrew	212,155.05
678P.E.	County Rd. No. 18, Hwy. 401 northerly	2.25	County	Northumberland and Durham	1,050.13
679	Fairbank's Lake Park Road	7.20	Drury, Denison and Graham	Sudbury	18,541.87
680	Killbear Park Road	5.60	Carling	Parry Sound	139,572.74
681	Thickson Road (part)	6.30	County	Ontario	250,214.77
682P.E.	Highway 402–County Road No. 4	2.25	Sarnia	Lambton	2,731.60
683	Lincoln/Welland	14.40	County	Lincoln and Welland	54,040.25
684	County Rd. No. 9, Hwy. 24 southerly	8.40	County	Norfolk	12,413.36
686	Lots 12/13, Con. II and III	1.75	South Monaghan	Northumberland and Durham	100,241.31
687D.R.	Paincourt easterly	1.00	Dover	Kent	198.66
688D.R.	Townline Road	1.40	Middleton and N. Walsingham	Norfolk	23,317.12
689	Yonge Boundary–Highway 29	7.00	Elizabethtown	Leeds and Grenville	74,418.06
690	Bowens Corners southerly	0.40	Dungannon	Hastings	76,989.86
691	Golf Links Road Extension	0.75	Shuniah	Thunder Bay	61,117.63
692	County Road No. 36 (part)	4.20	County	Elgin	189,182.40
693	Back Road	6.00	Tisdale	Cochrane	144,303.74
694	Wooler Road	4.40	County	Northumberland and Durham	253,742.36
695	County Road No. 17 (part)	9.20	County	Simcoe	352,671.02
696	Beaver Creek Bridge		Limerick	Hastings	18,036.78
697P.E.	County Road No. 1 (part)	10.00	County	Kent	12,000.00
698P.E.	Old Garden River Road	2.80	Tarentorus	Algoma	8,367.43
699	Weslemkoon Road (part)	0.35	Tudor and Cashel	Hastings	9,743.82
700P.E.	Stoney Lake North Shore Road	5.50	Burleigh	Peterborough	11,463.75
701P.E.	County Road No. 3–Mud Lake I.R.	2.70	Smith	Peterborough	1,434.65
702	Cooper's Falls–Housey Rapids	5.00	Ryde	Muskoka	39,246.75
703	Healey's Falls Road	4.40	Seymour	Northumberland and Durham	20,293.97
704	Rosemath easterly	2.90	Alnwick	Northumberland and Durham	5,934.60
706P.E.	Base Line Road	5.40	Darlington	Northumberland and Durham	9,900.39
707	Concession IV/V Road	5.40	Hagar	Sudbury	36,227.84
708	Burk's Falls easterly and southerly	2.00	Armour	Parry Sound	15,542.06
709	Machar Lake Bridge		Machar	Parry Sound	6,497.78
711P.E.	County Rd. No. 4, Frankford–Hwy. 401	5.10	County	Hastings	1,890.33
712P.E.	County Road No. 65	4.70	County	Wellington	6,700.00
713	Dean Lake Bridge		Thompson	Algoma	30,066.82
714	Birch Creek Bridge		Hallam	Sudbury	752.15
715P.E.	Road to Ontario Hospital	2.10	Sydenham	Grey	1,913.21
716P.E.	County Road No. 6–Highway 23 19	8.00	County	Perth	9,936.04

(Authorized by Part XI of the Highway Improvement Act)

Road No-	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1963-64
717	River Road	3.90	North Gower	Carleton	8,273.28
718P.E.	Bobcaygeon–Fenelon Falls	9.50	County	Victoria	12,493.42
719	Lots 12/13, Concession II–VIII	6.00	Mountain	Stormont, Dundas and Glengarry	77,553.92
720	Highway 588 northerly Concession V/VI	0.85	Gillies	Thunder Bay	5,865.38
721	County Road No. 18 and 5 (part)	4.00	County	Grey	35,566.13
722P.E.	County Road No. 7 (part)	7.00	County	Stormont, Dundas and Glengarry	10,201.67
723	Former Highway 86 at West Montrose	2.50	Woolwich	Waterloo	22,005.47
724	County Road No. 12 and 6A	6.50	County	Middlesex and Lambton	121,210.56
725P.E.	Lots 6/7, Concession B, A and 1	2.80	Murray	Northumberland and Durham	13,466.17
726P.E.	County Road No. 58 (part)	4.40	County	Wellington	6,700.00
727P.E.	County Road No. 69 (part)	2.90	County	Wellington	3,700.00
728P.E.	Township Boundary westerly–Oakleaf	1.10	Rear of Leeds and Lansdowne	Leeds and Grenville	1,476.00
729P.E.	County Rd. No. 5B westerly–Twp. Bdry.	0.90	Rear of Yonge and Escott	Leeds and Grenville	2,451.50
730	Granton northerly to Township Boundary	1.00	Biddulph	Middlesex	33,619.83
731P.E.	County Road No. 5 (part)	2.90	County	Lennox and Addington	10,768.69
732P.E.	Centreville–Highway 401	10.80	County	Lennox and Addington	24,284.28
734P.E.	Stephen/McGillivary Townline	3.00	McGillivary and Stephen	Middlesex and Huron	1,600.00
735P.E.	County Road No. 31 (part)	9.50	County	York	18,387.04
736P.E.	Highway No. 6–Victoria Bridge	2.20	Guelph	Victoria	1,500.00
737P.E.	Concession XII/XIII Road	1.25	Chisholm	Nipissing	1,349.88
738P.E.	Hardwood Lake–Palmer Rapids	7.00	Raglan	Renfrew	14,237.17
739P.E.	Sideroad 6/7	3.50	South Gower	Leeds and Grenville	3,631.04
740P.E.	Balsam Lake–Jones Boundary	4.30	Bangor, Wicklow and McClure	Hastings	13,161.70
741P.E.	County Road No. 15, Pakenham–Waba	9.50	County	Lanark	22,435.64
742	County Road No. 47	4.50	County	Carleton	26,056.09
743P.E.	Trout Lake Road	4.50	East Ferris	Nipissing	4,732.59
744P.E.	Twentieth Sideroad	5.10	Albion	Peel	13,048.43
746P.E.	County Road No. 15	13.00	County	Prince Edward	19,529.75
747P.E.	Alice–Petawawa Townline	5.00	Alice and Petawawa	Renfrew	7,646.72
748P.E.	Flinton–Hastings Boundary	3.80	Kaladar, Anglesea and Effingham	Lennox and Addington	5,444.29
749P.E.	Point Des Chenes Park Road	2.88	Korah	Algoma	406.20
752	County Rd. 12M and 12N, Old Indian Line	5.20	County	Haldimand	111,936.24
754P.E.	Dwyer Hill Road	6.90	Goulbourn	Carleton	9,853.86
755	Concession XVI/XVII	1.80	Nipissing	Parry Sound	26,259.74
757P.E.	Dilke/Nelles Boundary Road	7.00	Dilke	Rainy River	3,756.36
758P.E.	County Road No. 3 (part)	12.30	County	Bruce	29,583.64
761P.E.	Dorland–Sir John A. Macdonald's monument	3.75	Adolphustown	Lennox and Addington	1,625.35
762P.E.	Rotary Beach Road	1.20	Chaffey	Muskoka	1,555.74
763P.E.	Concession V/VI Road (part)	1.00	North Fredericksburgh	Lennox and Addington	2,345.15
765P.E.	County Road No. 16A (part)	3.50	Howe Island	Frontenac	3,927.28
766P.E.	Gillies Mill Road	3.20	McNab	Renfrew	601.79
768P.E.	Brinston Easterly Road	3.80	Matilda	Stormont, Dundas and Glengarry	4,427.66
770P.E.	St. David's Road (part)	0.50	Niagara	Lincoln	1,607.24
771P.E.	Kennebec Twp. Road (part)	2.70	Kennebec	Frontenac	4,706.77
	Totals	1,088.62			$11,108,753.48

APPENDIX No. 15

ROAD MILEAGES IN ONTARIO, DECEMBER 31, 1963

	Total Miles	Type of Pavement				
		Concrete	High Class Bituminous	Low Class Bituminous	Gravel and Crushed Stone	Earth
King's Highways	9,755.7	458.3	7,128.7	1,363.7	805.0	.....
Secondary Highways	2,784.1	.....	129.3	581.9	2,058.7	14.2
Tertiary Roads	127.2	.....	.....	.....	127.2	.....
Total King's Highways	12,667.0	458.3	7,258.0	1,945.6	2,990.9	14.2
County Roads	9,184.8	56.1	1,952.3	4,064.1	3,101.0	8.3
Organized Townships	49,054.9	154.0	1,679.0	2,661.3	41,219.8	3,340.8
Unorganized Twp.	4,216.3	.....	1.1	12.1	3,637.3	565.8
Total Municipal Roads	62,456.0	210.1	3,632.4	6,737.5	47,958.1	3,914.9
Total All Rural Highways and Roads	75,123.0	668.4	10,890.4	8,683.1	50,949.0	3,929.1
Metropolitan Roads	352.3	8.3	336.2	5.5	2.3	.....
City, Town and Village Streets	9,540.0	486.0	3,590.4	3,068.2	2,129.2	266.2
Total Urban Streets	9,892.3	494.3	3,926.6	3,073.7	2,131.5	266.2
GRAND TOTALS — 1963	85,015.30	1,162.70	14,817.00	11,756.80	53,080.50	4,195.30
— 1962	83,582.70	981.60	14,186.30	11,486.40	52,716.30	4,212.10
— 1961	85,903.81	848.12	13,255.70	11,120.66	52,491.85	8,193.48
— 1960	85,830.11	1,041.04	12,160.05	7,294.89	56,308.13	9,026.00
— 1959	85,526.75	1,148.66	11,419.11	6,271.03	57,093.14	9,594.81
— 1958	85,092.80	1,136.89	10,010.68	6,641.04	56,456.06	9,848.13
— 1957	83,803.37	1,180.75	10,253.83	6,199.26	56,086.51	10,083.02

CHRONOLOGY—DEPARTMENT OF HIGHWAYS

1963

February 15 — Ignace–Valora Road opened to the public as an "Industrial Road," permitting access between TCH 17 and Pickle Crowe.

March 28 — Department of Highways estimates for 1963-64 presented to the Legislature by Hon. Charles S. MacNaughton.

April 30 — A new road map for Northern Ontario was published for the first time.

June 6 — Special Emergency Patrols introduced on the Toronto By-pass section of Highway 401 which is being widened to 12 lanes.

June 28 — Highway 401 from Highway 4 (South of London) to Highway 76 opened to traffic.

July 19 — Interchange Numbering System introduced on Trans-provincial Highway 401.

July 31 — 31 miles of Lambton County Road between Courtright and Alvinston assumed as King's Highway 80.

September 5 — Published special strip map of Highway 401 for first time.

September 11 — Highway 405, Queen Elizabeth Way to Queenston-Lewiston International Bridge officially opened to traffic.

September 16 — Tri-Town By-pass, a 12-mile section of Highway 11 by-passing Cobalt, Haileybury and New Liskeard, was opened to traffic.

September 20 — Highway 401 from Highway 21 to Highway 2 (east of Tilbury) opened for traffic.

October 18 — Garden City Skyway, on Queen Elizabeth Way near St. Catharines, opened to traffic. (Officially opened by Prime Minister John P. Robarts on November 15, 1963.)

October 22 — Highway 401 from Highway 76 to Highway 21 opened to traffic.

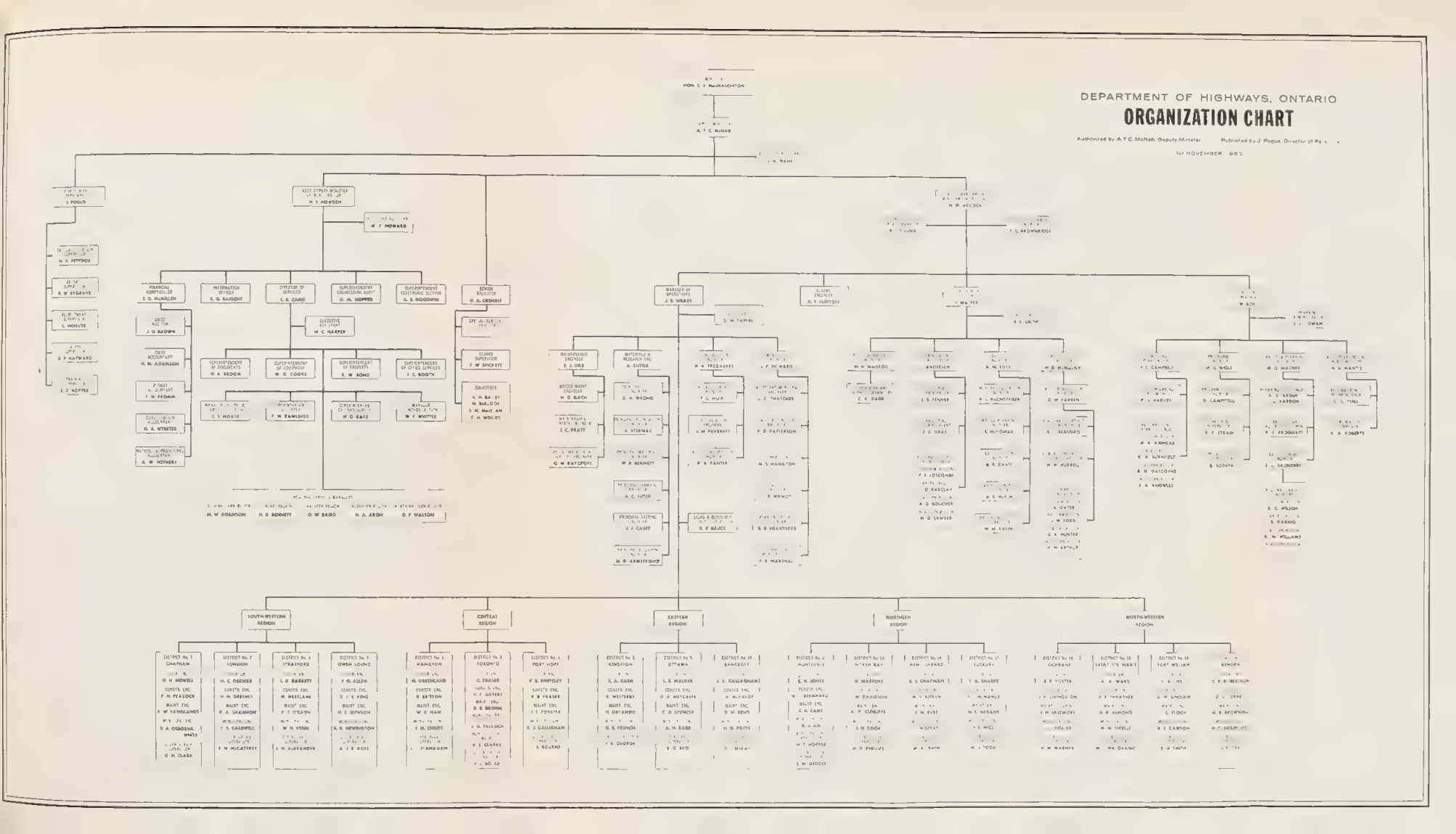
October 30 — Highway 401 from 8.7 miles east of Morrisburg to Cornwall opened to traffic.

November 1 — Highway 401 from Marysville to Napanee opened to traffic.

November 1 — International Bridge at Pigeon River opened to traffic.

December 4 — First section of Highway 403 from Queen Elizabeth Way to Longwood Road in Hamilton, officially opened to traffic.

December 9 — Highway 126 from 401 to the City of London opened to traffic.


DEPARTMENT OF HIGHWAYS, ONTARIO
ORGANIZATION CHART
Authorized by A.T.C. McNab, Deputy Minister
1st NOVEMBER 1963
SOUTH-WESTERN REGION
CENTRAL REGION
EASTERN REGION
NORTHERN REGION
NORTH-WESTERN REGION

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1964/65
Physical &
Applied Sci.
Serials

NNUAL REPORT

Department of Highways

ONTARIO

for the fiscal year ending
March 31st

1965

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ONTARIO
PROVINCE OF OPPORTUNITY

Government
Publications

Printed by order of The Legislative Assembly of Ontario: Sessional Paper No. 20

To The Honourable W. Earl Rowe,
Lieutenant-Governor of the Province of Ontario.

May It Please Your Honour:

The undersigned has the honour to transmit the Annual Report of the Department of Highways, Ontario, for the fiscal year ending March 31st, 1965.

Respectfully submitted,

Charles S. MacNaughton,
Minister of Highways.

Parliament Buildings,
Toronto, Ontario,
December 3, 1965.

To The Honourable Charles S. MacNaughton,
Minister of Highways, Ontario.

Sir:

I have the honour to present herewith the report of the activities of the Department of Highways for the fiscal year ending March 31, 1965.

The report covers the operations of the nine Branches and includes special reports on the Trans-Canada Highway and the Mining, Access, Resources and Forestry Roads.

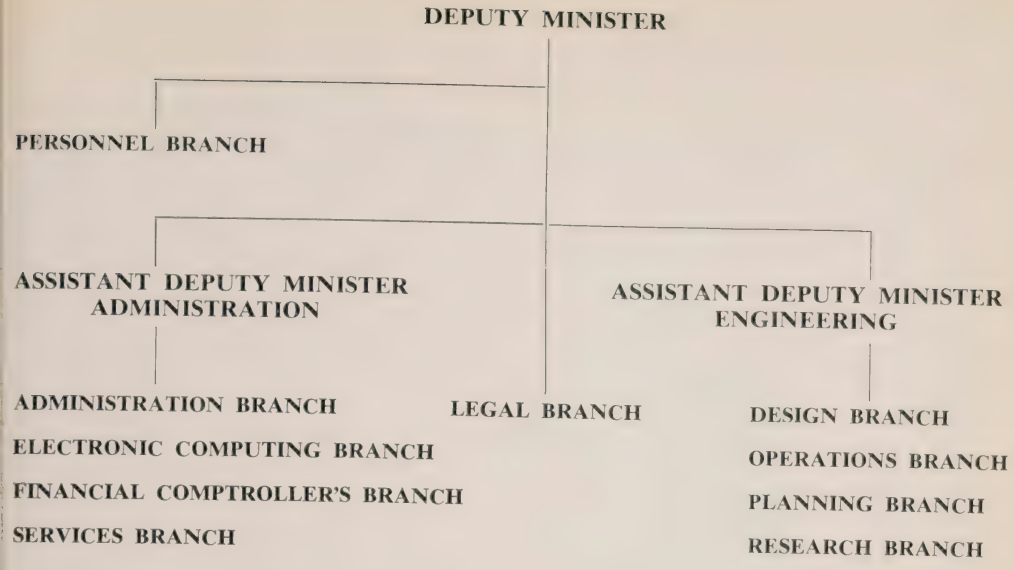
Respectfully submitted,

A. T. C. McNab,
Deputy Minister.

Downsview, Ontario,
December 1, 1965.



Honourable Charles S. MacNaughton
Minister of Highways, Ontario



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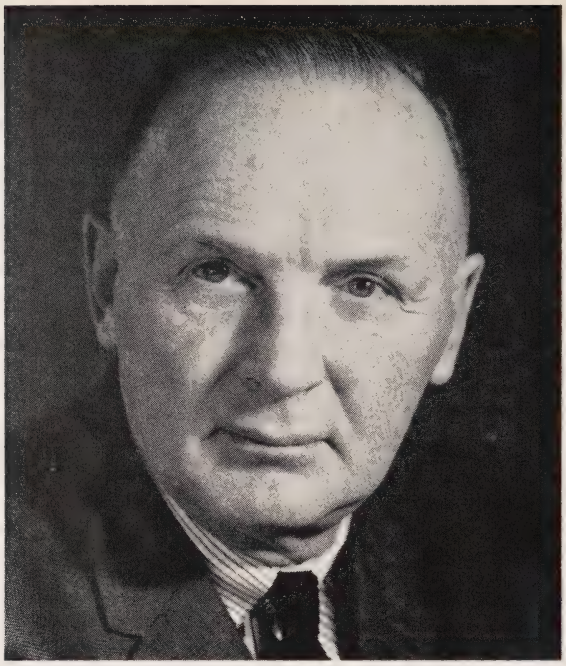
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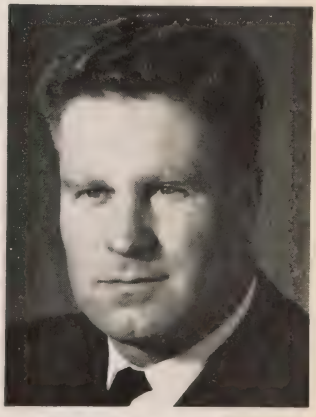
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Director, Research Branch

DEPUTY MINISTER'S REPORT

A. T. C. McNAB, Deputy Minister of Highways

Construction during the current fiscal year was greatly assisted by good weather. New and reconstructed sections of pavement totalled 460 miles and more than 60 new structures were completed.

On Highway 401, over 100 miles of new pavement were opened to traffic. The opening of the additional lanes between London and Tilbury left less than 20 miles in Western Ontario with only two lanes. In Eastern Ontario, on Highway 401, a four-lane section was opened from east of Lancaster to the Quebec border, making it possible to drive the full 510 miles from Windsor to Quebec. One of the longest two-lane sections opened was the 30 miles between west of Marysville to Highway 38 west of Kingston. The addition of two lanes from Cornwall to Lancaster added another 14-mile four-lane section. Before the end of the year, work began on the new four-lane 25-mile section of Highway 401, which will replace the present section along the St. Lawrence River between Gananoque and Highway 2, west of Brockville. Substantial progress was made on the program to widen to 12 lanes, the 17-mile Toronto Bypass section of Highway 401. In the summer, the first new section, a one-mile stretch from Hogg's Hollow west of Yonge Street (Highway 11) westerly to Avenue Road (11A) was completed. Scheduled to open late in 1965 is the five-mile section west from Avenue Road to Highway 400.

Construction is in progress on a further extension of Highway 403, Longwood Road to Aberdeen Avenue in Hamilton and the Brantford Bypass and on Highway 406, St. Catharines to Welland.

In the Orillia area, the widening to four lanes of Highway 11 from Orillia north for five miles was completed in September. Another contract to widen a further 3½ miles to south of the Severn River Bridge will be completed by the end of 1965. On Highway 12, the Atherley Narrows Bridge was opened in October, 1964, replacing the old swing bridge built in 1925.

The department awarded two contracts in November for work on the new high-level bridge across the Bay of Quinte, and a new section of highway connecting the bridge site with Highway 401 was completed.

The Ontario approaches to the Macdonald-Cartier interprovincial bridge, now under construction across the Ottawa River between Ottawa and Hull, were opened.

An additional 3½ miles of the Ottawa Queensway were opened, leaving approximately one mile to complete.

On the Trans-Canada Highway, 125 miles were under construction in 1964, 62 miles of which were completed during the year. Of the 1453 miles of the TCH in the province, 1135 miles have been completed to the required standards.

In North and Northwestern Ontario progress was made on: the new extension of Highway 11 from Fort Frances easterly to Atikokan; Highway 101, Wawa to Chapleau; an extension to Secondary Highway 544 between Sudbury and Timmins; and a new road running north from Highway 11 at Smooth Rock Falls for approximately 40 miles to serve a large Hydro development in the James Bay watershed.

Under the "Roads to Resources" program, a further 50 miles of new road were opened in 1964. The last section of the Spruce River Road was completed and work progressed to extend Highway 599 southerly from Savant Lake to Trans-Canada Highway 17 at Ignace.

In May 1964, it was announced that plans had been approved in principle for the construction of a controlled-access expressway system for the cities of Kitchener and Waterloo that would also provide connecting links with King's Highways in the area.

An announcement in June 1964 called for the design of two tunnels under the Welland ship canal, one in the city of St. Catharines, the other in the town of Thorold. This development followed an announcement in connection with the proposed twinning of the canal locks and the necessity for constructing new facilities for the movement of traffic across the canal at these points.

Early in the year, a new 1½-mile-long, four-lane controlled-access highway, linking Highway 401 with the new Toronto International Air Terminal, was opened.

In January 1965, it was announced that Highway 401 would be named the "Macdonald-Cartier Freeway".

Contracts were awarded for six additional Service Centres on Highway 401 and several picnic areas were opened adjacent to the eight Service Centres now in operation.

Among significant developments in the Department's internal organization was the announcement in June of a new Research Branch. The new branch is responsible for directing and co-ordinating the many research projects formerly carried out by the Joint Highway Research Programme as well as directing research into highway engineering problems for the Department and Ontario's municipalities. With the formation of the Research Branch, the former Materials and Research Division is now known as the Materials and Testing Division.

Contracts Completed

During 1964-65 completed capital contracts totalled 267 and maintenance contracts totalled 158.

Some 326 capital contracts and 130 ordinary (maintenance) contracts were awarded in 1964-65. New capital work included 308 miles of grading, 430 miles of hot mix paving and 86 structures of various types. Maintenance contracts covered 8 for surface treatment and 19 for winter sanding.

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Indices of Tender Prices Paid on Road Contracts and for Materials.

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted showing: Index of Tender Prices Paid on Road Contracts (Charts I–II) and Index of Tender and Material Prices (Chart III).

It is evident from these indices that the majority of unit prices on contracts awarded and prices paid for road material showed an increase during the year.

Expenditures, as reported by the Financial Comptroller, are summarized as follows:

	Fiscal Years Ending March 31, 1965	March 31, 1964
Gross capital payments on construction of King's Highways and Secondary Highways	$138,466,910	$138,795,163
Less: Recoveries on (1) Trans-Canada Highway, (2) Ottawa Queensway, (3) Railway Bridges, (4) City of Ottawa	6,316,241	6,686,686
Net capital payments on construction of King's Highways and Secondary Highways	$132,150,669	$132,108,477
Ordinary expenditures on King's Highways and Secondary Highways including maintenance and general operating expenses	53,913,047	47,841,283
Provincial subsidies on municipal roads and streets and cost of development roads and roads in unincorporated townships	112,972,411	100,527,229
Total Net Expenditures	$299,036,127	$280,476,989

ADMINISTRATION BRANCH

ENGINEERING AUDIT SECTION

David M. Hopper, Superintendent

The Engineering Audit Section is broken down into two main groups. Field Audit and Contract Checking.

Field Audit Group

This group, under the direction of Field Audit Supervisor, consists of an Estimating Group, which is located at Downsview, and Field Staff, which are established on a regional basis, with one regional supervisor, one assistant supervisor, two field parties, a weigh inspector, and an office draughtsman in each region. This staff conducts routine spot-checks by survey and by examination of records on all pre-engineering projects and construction contracts in the various districts. These audits are performed on capital, maintenance, development road, and connecting link contracts. Following the spot-checks, reports are forwarded to the various district engineers and other persons concerned, under covering letter of the Superintendent of Engineering Audit. The estimating group have a number of functions which include spot-checking various pre-engineering estimates to ensure that they adhere to normal estimating procedures, as established by the Road Design Division, and checking at random, final estimates which have been processed by the Contract Checking Group. Other reports compiled by this group include some contractors' claims, at the request of the Claims Engineer.

During the fiscal year of 1964–65, more than 420 field audits were performed, and 391 office audits.

Contract Checking Group

This group, under the direction of the Contract Checking Supervisor, is divided into four checking groups, and one "As Constructed Plans and Profiles" Drafting Group. The prime function of the Checking Group is the approval of all payment quantities subject to the payment limitations outlined under the contract tenders. Upon completion of the final review by the Contract Checking Group, a report is prepared, embodying the approved final payment quantities for the direction of the District Engineer and head office. These reports are made on all capital, maintenance, development road, and some connecting link contracts. In addition to the verifying final payment quantities, these reports also outline deficiencies in the records and the methods of payment, and are instrumental in improving the standard of records and payments on subsequent contracts. Unusual problems requiring special consideration are referred to the Director of Operations for clarification. By the use of these procedures, departmental decisions are consistent, and uniform treatment is given in all cases. The Drafting Group is responsible for the preparation of plans and profiles, showing the latest "As Constructed" data, which is derived from the construction records. These records have proven their value in the settling of contractor's claims and for the re-design of existing roads.

For the fiscal year 1964–65, the following table lists by districts, the number of contracts checked, with their total monetary value.

	Construction		Maintenance		Invitation Bid		Dev.
	No.	Value	No.	Value	No.	Value	Roads
Chatham	21	$ 4,098,298	8	$ 227,794	3	$ 24,723	....
London	22	6,510,367	5	201,150	1	7,328	1
Stratford	12	1,540,185	6	324,188	....	.....	8
Hamilton	41	13,606,876	15	800,841	5	35,856	1
Owen Sound	16	1,279,010	8	211,508	2	5,575	4
Toronto	24	8,543,471	16	687,36	8	100,265	4
Port Hope	8	228,091	12	229,531	1	7,786	2
Kingston	32	2,441,290	9	737,716	3	8,867	12
Ottawa	29	11,987,810	7	176,495	5	50,423	6
Bancroft	11	1,065,628	3	80,312	....	.....	8
Huntsville	18	3,776,403	11	201,810	1	2,730	
North Bay	12	2,870,539	6	175,864	1	14,291	2
New Liskeard	13	518,292	7	105,621	....	.....	
Cochrane	5	536,830	5	129,930	1	12,447	
Sudbury	6	987,163	9	198,416	....	.....	
Sault Ste. Marie	12	1,294,040	3	91,887	....	.....	
Fort William	17	3,704,248	1	3,085	3	27,433	
Kenora	7	2,811,267	....	.....	1	3,750	
Totals	306	$67,799,808	131	$ 4,583,684	35	$ 301,474	48

As in the previous year, there was a considerable exchange of staff between the Contract Checking Group and the Field Parties. Extra field parties were put in the field from head office during the construction season, and during the heavy checking months in the winter, additional staff were recruited from the outside regions. In addition to this, each region, during the past year, finalled several minor contracts, which was of great assistance to the Head Office Contract Checking Section.

INFORMATION SECTION

Robert G. Baigent, Information Officer

The information section is responsible for the collection and issuance of general information regarding department activities and for the printing and distribution of the Official Ontario Road Bulletin (issued every two weeks, May to October), the Annual Report and the employee's magazine, DHO News.

Distribution by the section during the fiscal year also included the initial mailings of the Capital Construction and Municipal programs, the Official Road Map of Ontario, the Highway 401 strip map, the Roads to Recreation pamphlet and special reports.

To provide the public with general information, numerous press releases, fact sheets and illustrations were sent to all Ontario newspapers, radio and TV stations. Special material was prepared, for feature articles, in the trade press and for officials of other highway and technical organizations.

Further new and replacement public service film clips on safety were distributed to all TV stations, including United States border stations where channels are directed to Ontario viewers. Similar safety spot announcements were also prepared and sent to all radio stations in the province.

The department's latest general release film "Roads to Prosperity" was first shown early in 1965 and distributed to all Canadian TV stations, to Ontario House in London and selected stations in the United States. Free general bookings were made available through the distributor and the department's film library.

DESIGN BRANCH

JOHN WALTER, P.Eng., Director of Design

CARTOGRAPHY SECTION

C. P. Robins, Supervisor

Early in the year maps at a scale of four miles to one inch of Brant, Elgin, Middlesex, Oxford, and Norfolk (old series), Essex, and Kent, were printed from bases revised in the fiscal year 1963 to 1964. During the year, the base was revised and a map printed of Haliburton at the same scale as above.

The scribing of the bases for a map of the counties of York, Peel, Halton, Wentworth, Haldimand, Lincoln, and Welland and a map of the counties of Huron, Perth, Waterloo, Wellington, and Dufferin at a scale of four miles to one inch was completed and maps printed.

The scribing of bases for maps of the following counties at a scale of four miles to one inch was continued:

(a) Bruce and Grey
(b) Essex, Kent and Lambton
(c) Ontario, Peterborough, Victoria, and Northumberland and Durham
(d) Carleton, Lanark, and Leeds and Grenville.

The scribing of bases for maps of the following counties at a scale of four miles to one inch was commenced:

(a) Brant, Elgin, Oxford, Norfolk, and Middlesex
(b) Simcoe
(c) Prince Edward, Frontenac, and Lennox and Addington
(d) Stormont, Dundas and Glengarry, and Prescott and Russell.

The work was completed of preparing material and checking the work for a new set of county and district maps for Southern Ontario, scales one mile to one inch and two miles to one inch. These maps were prepared outside the department.

Work of revising the cronaflex transparencies of the new series of county and district maps as described above was continued.

The bases for the printing of the 1965 strip map of Highway 401 were revised.

The base for the Roads to Recreation map was revised and brought up to date, preparatory for the 1965 edition.

The bases were revised for the printing of the 1965 official road map and new title blocks were made to show the new highway delineations. Copy was supplied, all printed matter was proof-read and all stages of the printing were checked.

Bases were made for a new highway district boundary map.

The leading map companies in Canada and the United States were supplied with information about new pavements and new highways so as to bring their road maps of Ontario up to date.

A sample plan of a local roads area was drawn up for the Municipal Roads Branch and, after approval, work began on drawing a series of these plans.

The highways, pavements and numbers were checked for a new printing of the 1965 map of Northern Ontario.

The maps of Southern and Northern Ontario, scale eight miles to one inch, and all the tracings of the districts which are used as patrol maps were revised and brought up to date.

The following miscellaneous work was carried out:

(1) Checking by-laws
(2) Reviewing subdivision plans
(3) Revising wall maps
(4) Marked portions of road maps to aid in filing for the Documents Section.

ROAD DESIGN DIVISION

H. D. McMillan, P.Eng., Road Design Engineer

D. W. Farren, P.Eng., Assistant Road Design Engineer

During the fiscal year, the Road Design Division completed the design drawings and contract documents and prepared quantity and cost estimates for 160 contracts, covering 960 miles of highway construction and reconstruction, which can be summarized as follows:

Grading, drainage and granular base	242.6 miles
Grading, drainage, granular base and hot mix paving	242.2 miles
* Grading, drainage, granular base and concrete paving	7.9 miles
Granular base and hot mix paving	280.3 miles
** Granular base and concrete paving	26.3 miles
Asphalt resurfacing	160.2 miles

In addition to those summarized above, designs were completed and contract documents, drawings and estimates prepared for 61 structure and approaches contracts and 67 miscellaneous ** contracts.

* *Most concrete paving is carried out on multilane expressways such as the Toronto By-pass. The 34.2 miles shown above is the equivalent of 99.8 miles of 2-lane pavement.*

** *Included under "miscellaneous" contracts are those for highway illumination, overhead sign supports, patrol yards, clearing and grubbing, sodding, service centres, chain link security fences, etc.*

Some of the major undertakings included in the above are:

Highway 401	13 projects
Highway 402	1 project
Highway 403	2 projects
Trans-Canada Highway	16 projects
Ottawa Queensway	7 projects

The Road Design Division is divided into five sectors namely, Central, Eastern, South-West, Northern and North-West Regions.

Central Region

This region is responsible for road design in the Toronto, Hamilton and Port Hope Districts.

85 projects were designed during the fiscal year.

Grading, drainage, granular base and hot mix paving		99.0 miles
Grading, drainage, granular base and concrete paving (*equivalent to 47.4 miles of 2-lane pavement*)		7.9 miles
Granular base and hot mix paving		9.2 miles
Granular base and concrete paving		3.3 miles
Asphalt resurfacing		38.5 miles
Structure and approaches	16 projects	
Miscellaneous	28 projects	

Eastern Region

This region consists of the Kingston, Ottawa and Bancroft Districts.

Some 60 projects were designed during the fiscal year.

Grading, drainage and granular base		66.0 miles
Granular base and hot mix paving		56.0 miles
Granular base and concrete paving		23.0 miles
Asphalt resurfacing		30.0 miles
Structure and approaches	19 projects	
Miscellaneous	13 projects	

South-West Region

This region consists of the London, Chatham, Stratford and Owen Sound Districts.

A total of 54 projects were designed during the fiscal year.

Grading, drainage and granular base		35.4 miles
Grading, drainage, granular base and hot mix paving		35.3 miles
Asphalt resurfacing		81.4 miles
Structure and approaches	14 projects	
Miscellaneous	9 projects	

Northern Region

The Northern Region is responsible for work in the following districts: Huntsville, North Bay, New Liskeard, Sudbury and most of Sault Ste. Marie.

60 projects were designed during the fiscal year.

Grading, drainage, granular base and hot mix paving		65.9 miles
Granular base and hot mix paving		119.7 miles
Structures and approaches	4 projects	
Miscellaneous	16 projects	

North-West Region

This region is composed of the following districts: Kenora, Fort William, Cochrane and part of Sault Ste. Marie.

38 projects were designed during the fiscal year.

Grading, drainage and granular base		141.2 miles
Grading, drainage, granular base and hot mix paving		42.0 miles
Granular base and hot mix paving		95.4 miles
Asphalt resurfacing		10.3 miles
Structures and approaches	8 projects	
Miscellaneous	1 project	

INTERSECTION DETAIL DESIGN SECTION

This section is responsible for the design, alignment and splining of interchanges and channelizations. They completed the calculations and plans for 23 interchanges and 54 channelizations.

GEOMETRIC DESIGN SECTION

This section, whose purpose is the preparation of geometric layout plans, precise alignment traverses and co-ordinate control systems, completed the geometric layout for approximately six miles of the Metropolitan Toronto By-pass section of the Macdonald-Cartier Freeway.

Electronic Computer Programming

Work in the adaptation of electronic computer techniques to design and estimating continued under the direction of the "Electronic Computer Liaison Engineer". Programs were developed, tested and proved which in the case of rural highways will result in an improved and more economical design.

HIGHWAY STANDARDS SECTION

This section under the direction of the "Standards Engineer", in addition to the routine work of the section, completed the development work begun in 1963 and prepared in manual form, a set of standards for expressway components, such as the Toronto By-pass where the number of traffic lanes exceeds four.

Special Studies Carried Out

1. A theoretical study was completed and a report prepared relating vehicle safety to speed, side and back slope ratios and ditch slopes.
2. Warrants for urban sections: A study commenced in 1963 was completed and a report prepared with recommendations of methods for evaluating the need for urban sections based on building density and frequency of entrances.
3. Standardization of utility placement within D.H.O. right-of-ways: A study commenced in 1963 was completed and a report prepared with recommendations for standardization of the locations both horizontally and vertically of the various types of utilities within the D.H.O. right-of-way.
4. Studies were instituted and are continuing on the subject of warrants for chain link security fence. The theoretical studies carried out by the Road Design Section in respect to guide rails and highway cross-sections and recommendations therefrom, have now resulted in the institution of an accelerated program of field testing and evaluation of various guide rail systems and cut and fill sections by the Department of Highways. The purpose of these tests being to establish sound and practical design standards and policy in their use.

BRIDGE DIVISION

A. M. Toye, P.Eng., Bridge Engineer

The activities of the Bridge Division are summarized under the following sections which form the division.

BRIDGE PLANNING SECTION

S. McCombie, P.Eng., Bridge Planning Engineer

During the year, 174 proposed bridge sites were studied and reported. Complete data covering 63 sites were prepared and submitted to the Bridge Design Section to be used for design purposes. In addition, 12 sites for proposed municipal bridges were investigated and reported.

Complete hydrological investigations were made on 138 sites on King's highways and municipal roads, and office studies were carried out on an additional 70 projects.

In June, 1964, an office was opened in Fort William to provide bridge planning service to the North-West Region, comprised of Sault Ste. Marie, Cochrane, Fort William and Kenora Districts. In addition to providing the expected services, this office has provided planning assistance and advice on bridges to several municipalities in the Kenora and Fort William Districts, to the Department of Lands and Forests, and to the Mining and Access Roads Committee.

BRIDGE DESIGN SECTION

B. R. Davis, P.Eng., Bridge Design Engineer

Designs for 70 bridges were completed by the Bridge Design Section and 23 by consultants during the year.

Many of these bridge designs are associated with the widening of the Macdonald-Cartier Freeway (Highway 401) such as:

(1) The Yonge Street interchange presented the usual problems associated with the widening of the Macdonald-Cartier Freeway, principally the necessity to maintain traffic on both the Freeway and Yonge Street while substantially altering the ramp alignments to suit the new requirements. The existing Yonge Street bridge will be widened to about twice its present width and a curved rigid frame bridge about 300 feet long will carry ramp traffic under the Freeway.

(2) The Highway 400 interchange at Jane Street presented a variety of time-consuming problems. The many services buried in the vicinity of the structure, the existing Black Creek Channel and the erratic variable nature of the founding soils presented severe restrictions in the design of the structures. Of noteworthy uniqueness is the curved structure to carry ramp traffic over Black Creek. This three-span bridge will have a cast-in-place post-tensioned concrete deck, superelevated and on a thirty degree curve. Each pier support will consist of a single round column to minimize span requirements and provide unobstructed clearance of the Black Creek Channel.

(3) In addition, two interesting and novel structures were designed over the Humber River at Weston Road interchange on the Macdonald-Cartier Freeway. Both of these bridges carry single-lane ramp roadways. These structures are the *first* continuous curved structural steel bridges designed by the department staff. The roadways of both structures are on horizontal and vertical curves. The steel beams are to be fabricated to follow the curves in order to give continuity and a pleasing appearance.

The Rouge River bridge on Highway 2 at the east limits of Metropolitan Toronto was the largest single project designed during the year. This 768 foot long "twin

structures" bridge will replace the existing two-lane bridge (built in 1920) with a four-lane bridge utilizing the most modern design concepts. This bridge will be a six-span continuous T-beam of cast-in-place post-tensioned concrete built in stages, so that the completed deck will be free of roadway expansion joints except at the abutments. Considering it is an unusually high structure (up to 70 feet) and should be practically maintenance free, we believe the estimated price indicates an economical structure reflecting the originality and creativity employed in this design.

Designs were also prepared for standard concrete and timber culverts, special design culverts, retaining walls, overhead signs, etc., with a total estimated value of over $2,500,000.

The department was honored by the selection of two of its structures namely, Bear Passage Bridge, Highway 11 near Fort Frances and the Garden City Skyway, St. Catharines, for Honorable Mention in the recent Canadian Design Awards program.

BRIDGE CONTROL SECTION

A. E. McKim, P.Eng., Bridge Control Engineer

The Contract Engineer prepared 114 estimates and special provisions for structure contracts with a total estimated value of $10,207,464.

The Materials Control Officer prepared 992 purchasing requisitions for materials to be supplied by the department with a value of $2,440,000. The materials requisitioned included 11,300 tons of reinforcing steel, 121,000 lineal feet of piling and 30,700 lineal feet of bridge handrailing. Arrangements were also made to have these materials inspected by private companies specializing in this work.

The Draughting Supervisor continued with his primary function of training a pool of draughtsmen for use throughout the division, while at the same time providing a variety of services. These services included the preparation of quantities of 50 structures for final payment purposes, and 80 structures, 20 special design culverts and 20 existing structures for removal, for tender purposes. Working drawings for six composite steel and timber bridges were prepared for the Municipal Bridge Liaison Section. Drawings were prepared for two existing bridges for demolition purposes. Other services include the preparation of I.B.M. computer program input data sheets, draughting of bridge standards and office standards, and the plotting of drainage areas for 25 sites for the Bridge Hydrology Engineer.

The Construction Liaison Group checked shop drawings and supervised the inspection of approximately 25 steel structures representing 7,500 tons of structural steel, the manufacture, shipping and erection of approximately 30 prestressed beam contracts, and assistance was given to district staff on insitu post-tensioned work. Falsework designs for 100 structures were checked and many of these were inspected at sites prior to placing any concrete. In addition, assistance was continued to the field staffs on all phases of bridge construction.

MUNICIPAL BRIDGE LIAISON SECTION

K. L. Kleinsteiber, P.Eng., Municipal Bridge Liaison Engineer

The Municipal Bridge Liaison Section received from Municipal Roads Branch, municipalities, suppliers and fabricators 1,106 sets of plans of various types of struc-

tures. They included preliminary and final plans, plans for bridge repairs and renovations, plans for maintenance buildings and fabricators' shop drawings.

During the year 731 sets of plans were approved consisting of 363 bridges, 326 culverts and 42 miscellaneous.

SUMMARY OF BRIDGE CONSTRUCTION

During the calendar year 101 structures consisting of some 21,445 feet of bridging were completed.

A complete listing of these structures is given in Appendix 4. Not included in this listing are 263 concrete culverts in spans ranging from four to 20 feet and costing $1,290,200.00.

PHOTOGRAMMETRY DIVISION

M. H. MacLeod, P.Eng., Photogrammetric Engineer

The Photogrammetry Division has the responsibility of using aerial photography and photogrammetric methods to supply the basic engineering needs for planning, design and construction. In the more heavily built-up urban areas of the province, this method of plan and cross-section preparation has become highly desirable.

Line Location and Special Projects

During the fiscal year, the Line Location and Special Projects Section projected 273 miles of new location and 30 miles of revisions in a total of 11 projects. For these locations 833 miles of photo investigation were carried out.

This section carried out a total of 30 drainage studies for various regions covering 2,962 square miles and six major hydrology studies covering 2,281 square miles. These were complete with soils and vegetation breakdowns in report form.

The preparation of mosaics for presentation and display purposes increased from 12 to 25 this year in a far wider range of scales. They were produced for Functional Planning, Bridge, Road Design and Department Consultants.

This year, with the aid of Engineering Surveys and our Control Group, this section produced two photographic "B" plans covering 3,709 acres. These plans are produced from enlarged aerial negatives which are matched and oriented to an exact control.

Compilation and Draughting

The Compilation and Draughting Sections produced 10 new study plans at the scale of 400′–1″ covering 199,879 acres and updated seven at the same scale covering an area of 138,916 acres.

Eighteen study plans at the scale of 1,320′–1″ were produced covering 4,830 square miles, while eight plans were revised covering 2,181 square miles.

Stereoplotting

The Stereoplotting and Control Section became even more diversified this year, producing many types of scaled plans and profiles. In areas of no information or control, two plans were produced at the scale of 600′–1″ showing form line contours. while 32 miles of machine profile were produced on the Multiplex.

Four plans of very minor control were produced at the scale of 250′–1″ showing a 10′ contour interval. These were left untraced.

Twenty-two large scaled engineering plans at the scale of 40′–1″ were produced covering 5,522 acres showing a 2′ contour interval. These same plans were cross sectioned every 50′ for a total of 19.5 miles.

Four plans of very minor control were produced at the scale of 250′–1″ showing a 10′ contour interval. These were left untraced.

Nine new plans at the scale of 50′–1″ showing a 2′ contour interval covering 3,378 acres were produced for major highway revisions. Great inroads have been made in the Northern Region with the production of the 200′–1″ contoured plan. These are excellent in areas of little or no available plan coverage and are ideal for the functional planning groups.

This year a total of 10 plans were produced: three covering an area of 3,890 acres draughted; and seven covering 24,908 acres contoured but untraced. The planning groups used copies of the original plotter manuscripts.

During this time 14 plans at the scale of 100′–1″, contoured and draughted, were produced of major highways in Southern Ontario. These plans covered a total of 17,107 acres.

During this year, for stereoplotting purposes, 635 Kelsh plates were produced and a total of 18,909 aerial photographs ordered for the various regions and filing purposes.

ENGINEERING SURVEYS DIVISION

Y. Andersen, O.L.S., Superintendent

The Engineering Surveys Division is responsible for all the field engineering survey work and plan preparation work for the Planning and Design Branches in all but the Northwestern Region. Other responsibilities, besides preparation work for current and future work projects, are: precise level surveys, ground control surveys (horizontal control) for photogrammetric plans, and standard surveys of existing highways for the purpose of updating existing plans and profiles.

This year 1,535 miles of surveys, 1,092 miles of plans, 100 bridge-site plans, 59 railway crossing plans and other associated surveys and plans were completed. Approximately 78% of the work was on work projects.

A summary of all work completed is as follows:

Head Office

Head Office Engineering Surveys is comprised of the following groups: Precise Level Surveys, Training, Reference Group, Strip Map Group, and a Drafting Group.

Precise Level Surveys

The object of precise leveling is to establish permanent and accurate bench marks by first-order leveling along highways throughout the province and to maintain a standard of undisputable accuracy. These level routes are scheduled to meet forthcoming work projects as well as to cover geodetic bench mark gap areas. They are set in such a way that they will accommodate preliminary planning, design and still remain permanent after construction.

This summer one more field party was added to our section making a total of two precise level parties. During the summer months our field parties were complemented with four exchange students, two from England and two from Sweden.

During the year a total of 279 precise level bench mark tablets were set with geodetic elevations, covering a distance of 253 miles. These were set along the following routes:

Highway 41	Kaladar (Hwy. 7) to Pembroke (Hwy. 17)
Highway 7	Kaladar (Hwy. 41) to Actinolite (Hwy. 37)
Kitchener-Waterloo Expressway	Fischer Road to Highway 85
Highway 7	Kitchener to Breslau
Highway 68	Little Current to South Baymouth
Highways 540, 551 and 542	Little Current to junction of Highway 68
Highway 3	St. Thomas to Aylmer (Hwy. 73)
Highway 73	Port Bruce to Aylmer (Hwy. 3)

Also this year, five frost-test sites were established in the following D.H.O. patrol yards: Whitefish, Wanapitei—District 17; Verona, Seeley's Bay—District 8; and Cooksville—District 6. These frost tests are to determine the frost action on eleven pipe-type bench marks set at various depths and conditions in each test area. Readings will be taken at least three times a year for at least the next five years.

A number of precise level bench marks were set along the following routes while establishing frost-test sites:

Highway 38	Verona to Godfrey
Highway 17	Wanapitei to Whitefish

Copies of the results of precise level surveys (B.M. elevations and descriptions) were distributed to the districts, regional offices, Department of Mines and Technical Surveys, Ottawa; Department of Public Works and the Department of Energy and Resources Management.

Training

During the year a total of 94 candidates attended the following:

Four qualifying courses with examinations, these being three Draftsman, Gr. 1 Courses and one Engineer's Assistant 3 Course.

Two Engineer's Assistant 2 qualifying examinations.

One Engineer's Assistant 4 Refresher Course.

Reference Group

Existing highway plans were kept up to date by the addition of 4,764 land plans, deeds, registered subdivision, property sales, annexations, property requests, road closings and road openings. A total of 286 new profiles and plans of all types were numbered and cross-referenced. Highway number changes involved updating 234 plans and profiles.

Strip Plan Group

A total of 319 strip plans of highways, secondary highways and tertiary roads are now on file and are being continuously updated.

Highway strip plans were prepared for 21 new highways, 67 strip plans were revised and 50 strip plans were retraced.

Prints of strip plans were supplied on a regular basis to 54 offices throughout the department.

In addition to the above, various miscellaneous charts, graphs and floor plans were produced.

A complete set of the latest militia maps, Lands and Forests maps and county maps are kept by this group, and distributed to our regional offices periodically.

Drafting Group

The Head Office Drafting Group completed the following plans and profiles which is regional overload work:

Dist. No. 1	5.7 miles
Dist. No. 4	5.0 "
Dist. No. 6	31.7 "
Dist. No. 8	14.3 "
Dist. No. 9	24.6 "
Dist. No. 10	1.3 "
Dist. No. 11	19.6 "
Dist. No. 13	12.3 "
Dist. No. 14	40.8 "
Total	155.3 miles

In addition to the above, the following work was completed during the year which accounted for 25% of the Head Office drafting staff for the whole year:

Numerous additions sent in by Districts Nos. 1, 3, 4, 5, 7, 11, 13 and 18 for updating plans as per Circular 60-104.

Miscellaneous work, such as display drawings for the Canadian Good Roads Association, was completed.

Also during the year it became the responsibility of this group to plot and add to the original linens the approved grades for work projects as submitted by the Road Design Division and approved grade revisions for contracts as submitted by the Operations Branch. These grade revisions totalled 150 miles.

Southwestern Region

	Plan Mileage	Survey Mileage	Bridge Sites Plans	Bridge Sites Surveys	Railway Crossings Plans	Railway Crossings Surveys	Miscellaneous Plans	Miscellaneous Surveys
Dist. No. 1	82.5	85.8	9	14	2	5	....	2
Dist. No. 2	52.7	121.2	7	9	6	11	....	5
Dist. No. 3	65.0	39.3	8	3	7	4	....	1
Dist. No. 5	99.6	66.2	5	1	3	4	....	1
Totals	299.8	312.5	29	27	18	24	nil	8

In addition to above:

50 miles of original cross sections were taken
51 miles of preliminary cross sections were taken
9 miles of cross sections for resurfacing were taken
14 miles of photo control were set
15 miles of staking for soils were set.

Note: Miscellaneous plans and surveys refer to patrol yards, service centres, intersection plans, Energy Board plans, etc.

Central Region

	Plan Mileage	Survey Mileage	Bridge Sites Plans	Bridge Sites Surveys	Railway Crossings Plans	Railway Crossings Surveys	Miscellaneous Plans	Miscellaneous Surveys
Dist. No. 4	145.4	246.5	21	14	9	1	1	3
Dist. No. 6	73.2	82.5	10	6	5	4	1	2
Dist. No. 7	65.5	97.5	5	6	4	6	....	1
Totals	284.1	426.5	36	26	18	11	2	6

In addition to above:

12 miles of original cross sections were taken
40 miles of preliminary cross sections were taken
311 miles of photo control were set
11 miles of staking for soils were set
12 miles of bore hole staking for soils were set
182 miles of field checking of photo plans were done
14 miles of hydrology survey were taken for Bridge Office
14 railway site surveys were taken for Program Inventory

Numerous additions sent in by Districts Nos. 4, 5, 6, 7, 13, 17, 18 and 20 for updating plans as per Circular 60–104 and other miscellaneous drafting accounted for 4% of the drafting staff for the whole year.

This year the Central Region assisted the Northern Region by loaning three parties for two months for bush work on the proposed Sudbury to Timmins highway.

Eastern Region

	Plan Mileage	Survey Mileage	Bridge Sites Plans	Bridge Sites Surveys	Railway Crossings Plans	Railway Crossings Surveys	Miscellaneous Plans	Miscellaneous Surveys
Dist. No. 8	64.5	137.8	8	7	4	2	2	7
Dist. No. 9	39.0	155.0	2	2	2	2	2	4
Dist. No. 10	52.8	86.0	....	2	....	1	2	5
Totals	156.3	378.8	10	11	6	5	6	16

In addition to above:

30 miles of original cross sections were taken
110 miles of preliminary cross sections were taken
77 miles of study plan updating were surveyed
60 miles of study plan updating were drafted
10 railway site surveys were taken for Program Inventory.

This year the Eastern Region assisted the Northern Region by loaning two parties for three months on two separate occasions for bush work on the proposed Sudbury to Timmins highway.

Northern Region

	Plan Mileage	Survey Mileage	Bridge Sites Plans	Bridge Sites Surveys	Railway Crossings Plans	Railway Crossings Surveys	Miscellaneous Plans	Miscellaneous Surveys
Dist. No. 11	34.6	112.3	10	8	1	1	1	1
Dist. No. 13	42.1	68.8	4	6	....	5	1	....
Dist. No. 14	86.6	99.4	5	3	3	1	1	....
Dist. No. 17	33.0	136.6	8	14	4	4	....	1
Totals	196.3	417.1	27	31	8	11	3	2

In addition to above:

76 miles of original cross sections were taken
111 miles of preliminary cross sections were taken
71 miles of photo control were set
20 miles of staking for soils were set
5 railway site surveys were taken for Program Inventory.

During the year three bush camps were set up on the proposed Sudbury to Timmins highway and a total of 15 miles of final alignment, cutting, staking, levels were run and accompanying plans and profiles made.

ELECTRONIC COMPUTING BRANCH

A. E. GOODWIN, B.A., P.Eng., Director

On May 13, 1964 the Electronic Computing Centre was officially designated as a Branch of the Department of Highways.

The purpose of the branch is to provide programming, systems and data processing services to all branches of the department in their diversified engineering, accounting, statistical, and/or management responsibilities. Consultation is also extended to other departments of the government and during the past year a number of complex management projects were undertaken.

Significant new projects for computer applications which were undertaken by this branch for the department during the fiscal year 1964–65 are:

Design Branch

- Bridge Geometry Program
- Continuous Bridge Program
- Reinforcing Steel Bar Schedule
- Road Design Programs

Financial Comptroller Branch

- Regular and Probationary Payroll Records and Yearly Earnings Statement

Operations Branch

- Complex Slope Stability Analysis and Design
- Final Pay Area and Volume Program
- Highway Maintenance Cost Study
- Municipal Roads Needs Study
- Progress Payment Certificates
- Stresses Underneath Embankments

Planning Branch

- Gravity Model—Traffic
- Highway Railway and Structure Inventories and Statistical Reports
- Matrix Addition and Transposition—Traffic
- Minimum Path Program—Traffic
- Moving Accident Rate Program
- Origin—Destination Basic Analysis—Traffic
- Traffic Assignment
- Traffic Balancing

Research Branch

- Contract Bid Analysis (over 50 programs)

Services Branch

- Land Surveys Program
- Sites and Buildings Inventory

Management

- Critical Path Systems Application Programs
- Equipment Depreciation Program
- KWIC (Keyword in Context) Indexing Program

Significant projects undertaken at the request of other departments during the fiscal year 1964–65 on a programming, systems, or consultation basis are:

DEPARTMENT OF ATTORNEY-GENERAL

Fallout Surveys Statistical Summary

DEPARTMENT OF CIVIL SERVICE

Analysis of Fringe Benefits
Salary Survey Analysis
Training Needs Survey

DEPARTMENT OF ENERGY AND RESOURCES MANAGEMENT

Flood Control Program
Statistical Analysis of Hydrological Observations

DEPARTMENT OF LANDS AND FORESTS

Recreation Travel Study

ONTARIO PROVINCIAL POLICE

Highway Traffic Accident Report
Highway Traffic Violation Report
O.P.P. Prosecution Report

OSGOODE HALL

Motor Accident Litigation Study

Significant applications introduced to the Production Schedule are:

Road Design Area and Volume Earth-Rock Calculation Program
Slope Stability Effective and Total Stress Program
O.P.P. Accidents, Violations, Prosecutions Programs

In addition, the branch is participating, as a consultant, in an automatic data processing study for the Provincial Government. A report on this study is to be presented to the Cabinet, and it may well become the criteria for defining the future scope of automatic data processing in the government.

FINANCIAL COMPTROLLER'S BRANCH

J. G. McMILLEN, C.A., Comptroller

The following statements outline the expenditure and cash receipts of the Department of Highways, Ontario, for the year ended March 31, 1965.

I. Ordinary Expenditure
II. Capital Payments, including Expenditure Summary
III. Trans-Canada Highway
IV. The "Queensway"-Ottawa
V. Receipts
VI. Comparison of Average Unit Prices Paid on Contracts
VII. Burlington Bay Skyway
VIII. Garden City Skyway

Total Expenditures

The "Expenditure Summary" (Statement II) sets out total ordinary expenditure and capital payments at $299,036,127. The following is a comparison of total expenditure with previous years.

1960	$248,514,195	1963	$251,152,745
1961	237,994,017	1964	280,476,989
1962	243,238,200	1965	299,036,127

Trans-Canada Highway Agreement

Expenditure of the Department under this agreement is shown in Statement III in the amount of	$215,223,739
with funds recovered or recoverable of	112,453,594
and a net cost to the Department of	$102,770,145

Recoverable Expenditures

Within the fiscal year, the Department recovered $12,916,674, made up as follows:

Trans-Canada Highway		$ 2,617,937
Ottawa Queensway—Dominion Government	$1,071,872	
—City of Ottawa	750,000	1,821,872
Railway Bridges		1,876,432
Total of items detailed in Statement II		$ 6,316,241
Dominion-Provincial Resources Roads		750,000
Ontario Department of Mines		777,359
Sundry items credited to expenditure or to revenue		5,073,074
		$12,916,674

Pre-qualification of Contractors

During the year the procedures governing the qualification of contractors were modified. The changes included an extension of the procedures to include all capital contracts, large maintenance, resurfacing, hot mix patching, and fabrication and

erection of structural steel contracts. A provision was added whereby a contractor may, in certain circumstances, have his basic rating reduced by any penalties which affect the ratings of an associated or related contractor. Norwithstanding the above, selected small capital contracts and those requiring the supply of special materials were not called as qualified contracts.

Of the 326 capital contracts awarded during the year, 255 or 78.3% required the pre-qualification of contractors. There were 130 ordinary contracts awarded during the year of which 93 or 71.5% required pre-qualification. An average of 5.3 bids were received on pre-qualified contracts as compared with 4.1 on unqualified contracts.

Indices of Tender Prices Paid on Road Contracts and for Materials

To illustrate the trend of prices paid this year in relation to previous years, the following charts are submitted showing:

Index of Tender Prices paid on Road Contracts (Charts I-II) and
Index of Tender and Material Prices (Chart III)

It is evident from these indices that unit prices for the majority of tender items increased slightly and prices paid for road materials also rose slightly during the year.

Burlington Bay Skyway

The accompanying statement indicates a continued upward trend in revenue and in the number of vehicles using the Burlington Bay Skyway. It is significant that the trend in revenue continued to rise although the ticket fare for Class II and Class III vehicles was reduced on July 23rd, from 16⅔c. and 30c., to 10c. and 15c. respectively.

Garden City Skyway

Statement VIII shows the operating results of the Skyway for the full fiscal year. The toll charges are the same as for the Burlington Bay Skyway, with tickets or tokens sold at either bridge being acceptable at both toll facilities.

CHART I

INDICES OF TENDER PRICES PAID ON ROAD CONTRACTS

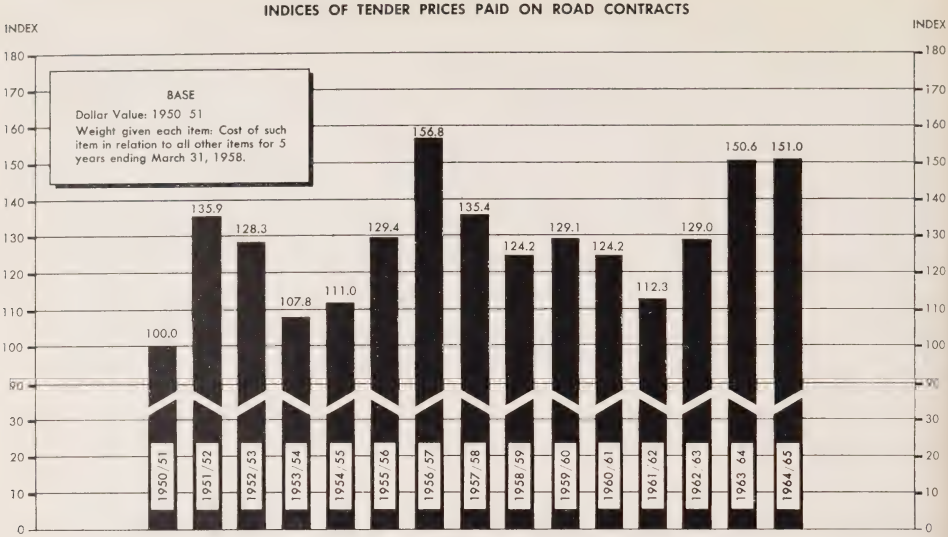


CHART II

TENDER PRICE INDICES

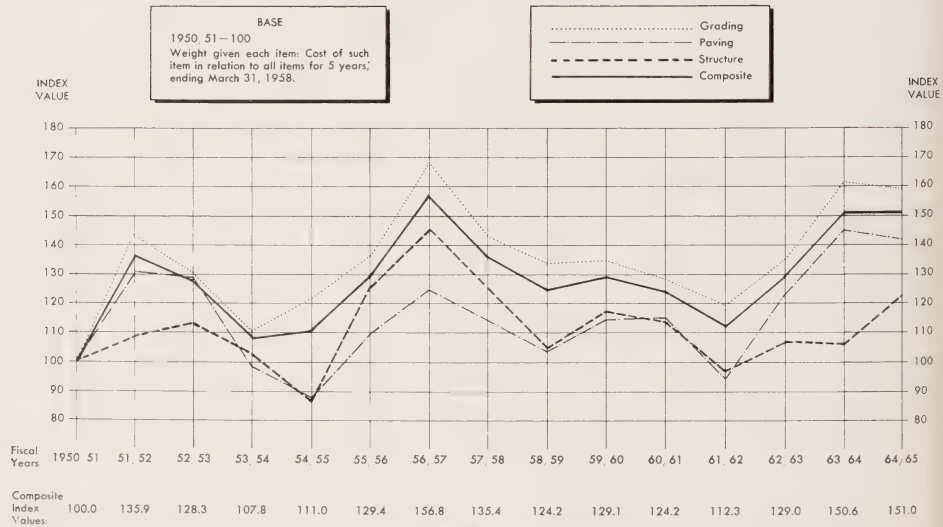
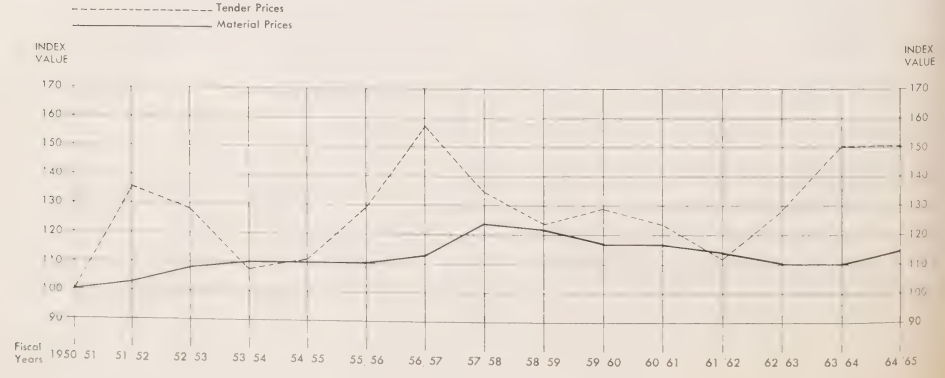


CHART III

COMPARISON OF TENDER AND MATERIAL PRICE INDICES



STATEMENT 1

Ordinary Expenditure

For the Fiscal Years Ending March 31, 1965 and March 31, 1964

	Year Ending March 31, 1965		Year Ending March 31, 1964	
Maintenance of King's Highways and Secondary Highways—				
Winter Maintenance—				
Contract and day labour	$18,923,555		$15,240,503	
Equipment operating costs due to stand-by (60%)	295,719		357,286	
Summer Maintenance—				
Patrol costs	10,461,186		10,196,177	
Gravel crushing, contract and day labour	541,556		1,017,821	
Prime contract and day labour	736,100		624,264	
Hot-mix patching, contract and day labour	1,237,135		975,031	
Surface treatment, contract and day labour	338,007		411,238	
Mulch, day labour	94,601		74,515	
Major bridge repairs	370,776		245,627	
Salt shed construction	.....		40,997	
Equipment operating costs due to stand-by (40%)	197,146		238,190	
Operation of ferries	487,073		340,813	
Flood and other emergencies	217,933		12,196	
District office overheads, including engineering, warehouse and municipal	8,108,709		7,543,527	
Expenditures recovered but credited to revenue	252,276		221,547	
Increase (decrease) in inventories	(131,609)		119,279	
		$42,130,163		$37,659,011
Repaving of present roads		1,156,901		979,436
Maintenance of development roads		86,761		100,627
Maintenance of roads in unincorporated townships in Northern Ontario		619,569		668,366
Building repairs		226,347		.....
Total (see Appendices 2 and 3 for distribution of above expenditures by counties, roads, etc.)		$44,219,741		$39,407,440
General Operating Expenditures—				
Purchase of new trucks, tractors, graders, plows and other road equipment	$ 2,006,534		$ 1,413,707	
Printing and stationery	1,001,318		925,723	
Office furniture and equipment	342,649		264,635	
Workmen's compensation	229,335		280,118	
Insurance and claims	258,181		229,502	
Unemployment insurance stamps	185,130		212,488	
Maintenance of buildings and area office rentals	140,522		216,255	
Bus rentals	.....		26,792	
Teletype rentals	86,390		96,702	
Staff training	103,360		73,149	
Recoverable expenditures (net)	(3,958)		(1,603)	
Central stores, increase in stock	16,444		18,167	
		$ 4,365,905		$ 3,755,635
Head Office—				
General administrative and operating staff salaries	$ 4,499,295		$ 4,128,071	
Travelling expenses	267,329		278,013	
Electronic section salaries and equipment rentals	180,011		133,446	

STATEMENT 1 (Cont'd)

Sundry	566,580		488,773	
		$ 5,513,215		$ 5,028,303
Road publicity, etc.		147,654		149,042
Burlington Bay Skyway, toll collection costs		210,737		203,036
Garden City Skyway, toll collection costs		162,125		66,820
Municipal Subsidies—				
County roads	$ 6,184,380		$ 6,296,292	
Township roads	15,405,063		14,885,765	
Cities, towns and villages	12,329,309		11,787,400	
		$33,918,752		$32,969,457
TOTAL ORDINARY EXPENDITURES		$88,538,129		$81,579,733
Per Public Accounts				
Total Ordinary Expenditures per Public Accounts	$88,538,129		$81,579,733	

STATEMENT II

Capital Payments

For the Fiscal Years Ending March 31, 1965 and March 31, 1964

	YEAR ENDING MARCH 31, 1965		YEAR ENDING MARCH 31, 1964	
Construction of King's Highways and Secondary Highways—				
Payments to contractors	$66,137,273		$68,985,522	
Materials and sundry contract expenditures	33,340,877		35,203,836	
Engineering	10,179,627		10,642,779	
		$109,657,777		$114,832,137
Construction of Development Roads		14,368,227		11,008,126
Construction of roads in unincorporated townships in Northern Ontario		582,562		708,473
Expenditures allocated to the above roads—				
Property purchases	$ 7,459,670		$ 7,999,046	
Land surveys	1,877,764		1,825,292	
Planning	923,937		388,628	
Design	5,211,299		4,234,242	
Buildings	245,825		.....	
		$ 15,718,495		$ 14,447,208
Total (see Appendices 2 and 3 for distribution of above expenditures by counties, roads, etc.)		$140,327,061		$140,995,944
Expenditures of Head Office branches unallocated and not included above:				
Right of way Division	$ 1,849,683		$ 1,564,226	
Land Surveys	914,841		1,098,063	
Planning	2,852,918		2,096,373	
Design	1,660,113		1,667,955	
Construction of new buildings	22,385		270,317	
Soils material and testing	2,875,726		2,559,636	
Engineering audit	733,364		709,038	
Increase (decrease) in Bailey bridge and steel inventories	(26,222)		(232,626)	
Recoverable expenditures (net)	1,357,713		(776,894)	
Electronic section, salaries and equipment rentals	687,401		530,292	
Sundry	162,716		29,438	
		$ 13,090,638		$ 9,515,818

STATEMENT II (Cont'd)

Municipal Subsidies:				
County roads	$14,177,393		$13,487,746	
Township roads	15,839,442		15,037,696	
Cities, towns and villages	33,379,705		26,546,738	
		$ 63,396,540		$ 55,072,180
TOTAL GROSS CAPITAL PAYMENTS ON CONSTRUCTION		$216,814,239		$205,583,942
Less Recoveries:				
Trans-Canada Highway	$ 2,617,937		$ 2,990,783	
Ottawa Queensway—				
Dominion Government	1,071,872		1,211,642	
City of Ottawa	750,000		600,000	
Railway Bridges	1,876,432		1,884,261	
		$ 6,316,241		$ 6,686,686
NET CAPITAL PAYMENTS PER PUBLIC ACCOUNTS		$210,497,998		$198,897,256
Expenditure Summary				
Ordinary expenditure	$ 88,538,129		$ 81,579,733	
Capital payments, net	210,497,998		198,897,256	
		$299,036,127		$280,476,989
TOTALS		$299,036,127		$280,476,989

STATEMENT III

Trans-Canada Highways

The following statement sets out expenditure and amounts recoverable on the Trans-Canada Highway from the inception of the agreement with the Dominion Government on April 24, 1950.

	REFUNDABLE BY DOMINION GOVERNMENT	EXPENDED BY DEPARTMENT
Refunded by Dominion Government on account of work performed prior to April 24, 1950	$ 1,569,640	$
Year ending March 31, 1951	2,749,329	7,043,559
" " " 1952	3,453,866	8,242,801
" " " 1953	4,103,753	11,746,130
" " " 1954	2,486,860	9,686,452
" " " 1955	6,274,487	5,675,343
" " " 1956	3,365,959	9,602,299
" " " 1957	4,855,053	13,996,280
" " " 1958	12,381,361	20,683,306
" " " 1959	15,803,757	27,995,777
" " " 1960	17,662,423	28,412,552
" " " 1961	16,500,840	24,786,757
" " " 1962	11,623,549	16,168,477
" " " 1963	3,958,997	8,164,528
" " " 1964	2,990,783	6,784,073
" " " 1965	2,617,937	5,591,696
Expenditure by Department for property and other non-recoverable expenditures		10,643,709
TOTAL TO MARCH 31, 1965	$112,398,594	$215,223,739
Further claims to be submitted based on expenditures to March 31, 1965—Claim No. 142	55,000	
TOTAL REFUNDS BY DOMINION GOVERNMENT		$112,453,594
NET ESTIMATED COST TO MARCH 31, 1965		$102,770,145

STATEMENT IV
The Queensway-Ottawa

The following statement sets out expenditure and amounts recoverable on the "Queensway"-Ottawa since the signing of the agreement with the Dominion Government, the Federal District Commission and the City of Ottawa, on March 19, 1957.

EXPENDED BY DEPARTMENT:			
Year ending March 31, 1958		$ 563,956	
" " " 1959		1,720,076	
" " " 1960		3,860,475	
" " " 1961		5,723,245	
" " " 1962		3,889,962	
" " " 1963		3,778,739	
" " " 1964		5,215,154	
" " " 1965		3,411,781	
			$28,163,388
RECOVERED FROM DOMINION GOVERNMENT:			
Year ending March 31, 1958		$ 204,500	
" " " 1959		109,221	
" " " 1960		773,681	
" " " 1961		1,367,729	
" " " 1962		1,380,118	
" " " 1963		951,729	
" " " 1964		1,211,642	
" " " 1965		1,071,872	
		$7,070,492	
Further amounts to be recovered based on expenditure to March 31, 1965		172,248	
		$7,242,740	
Recovered from the City of Ottawa		3,150,000	
AMOUNTS TO BE RECOVERED FROM:			
The City of Ottawa	$2,591,958		
Dominion Government and the City of Ottawa—in process	1,096,996	3,688,954	
TOTAL RECOVERIES			$14,081,694
NET ESTIMATED COST TO MARCH 31, 1965			$14,081,694

STATEMENT V
Statement of Receipts
For the Fiscal Years Ending March 31, 1965 and March 31, 1964

	YEARS ENDING	
	MARCH 31, 1965	MARCH 31, 1964
Sales of land and buildings	$ 357,341	$1,223,722
Property rentals	716,679	267,384
Sales of services and materials	596,092	456,065
Permits—sign and housemoving	87,506	74,767
Gas pump revenue	2,325	28,725
Gas line franchises	6,110	7,840
Burlington Bay Skyway	897,207	857,582
Garden City Skyway	591,289	183,389
Miscellaneous	596,150	275,935
TOTAL RECEIPTS	$3,850,699	$3,375,409
Distribution:		
Ordinary revenue	$2,964,070	$1,938,398
Capital receipts	886,629	1,437,011
	$3,850,699	$3,375,409

STATEMENT VI

Department of Highways Ontario

Comparison of Average Unit Prices Paid on Contracts

(Items used for price index purposes)

For Period April 1, 1950 to March 31, 1965

Fiscal Year	Clearing acre	Grubbing acre	Earth Excavation, Cu. Yd.	Rock Excavation, Cu. Yd.	Granular "A", Ton	Granular "B", Ton	⅝" Crushed Gravel "A", Ton	⅝" Crushed Gravel "B", Ton	Bituminous Hot Mix Top Course, Ton	Bituminous Hot Mix Base Course, Ton	Sand Cushion, Ton	Earth Compaction, Cu. Yd.	Compaction Equipment, Hour	Water for Compaction, M. Gal.	Concrete in Culverts, Cu. Yd.	Concrete in Structures, Cu. Yd.	Structural Steel Fabrication, Ton	Structural Steel Erection, Ton
	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
1950/51	93.24	102.09	.36	1.41	.93	.58	1.07	.98	3.47	3.31	.57	.026	.....	6.30	22.09	29.63	223.41	75.09
1951/52	143.39	117.85	.54	1.77	1.61	.84	1.45	1.12	4.53	4.32	.68	.032	.....	7.63	28.42	32.29	239.72	76.84
1952/53	121.27	132.66	.39	1.63	1.47	.89	1.45	1.40	4.26	4.34	.79	.029	.....	6.86	23.76	33.49	256.02	78.58
1953/54	122.96	112.54	.37	1.26	1.25	.65	1.36	1.10	3.36	3.28	.60	.027	.....	6.35	24.75	32.88	216.76	60.27
1954/55	127.65	119.63	.40	1.72	1.23	.76	1.32	1.23	2.92	2.99	.70	.027	.....	6.15	23.59	27.36	194.46	40.04
1955/56	177.41	166.17	.44	1.80	1.36	.93	1.36	1.38	4.38	3.38	.63	.035	.....	5.79	27.95	36.64	281.23	96.28
1956/57	227.16	195.71	.60	2.42	1.58	1.03	1.43	1.49	4.91	3.89	.97	.045	.....	6.55	34.34	39.85	354.80	119.12
1957/58	196.14	200.72	.45	2.13	1.43	.83	1.35	1.44	4.53	3.56	.79	.044	.....	5.48	29.48	38.11	277.96	87.27
1958/59	183.63	183.30	.40	2.07	1.34	.87	1.20	1.27	4.27	3.13	.71	.042	.....	4.56	26.79	31.98	237.93	59.50
1959/60	157.32	156.31	.41	2.00	1.44	.82	1.17	1.38	4.68	3.48	.79	.....	6.29	4.37	27.90	37.77	246.28	63.69
1960/61	157.89	161.49	.43	1.81	1.26	.71	1.55	1.37	4.27	3.66	.70	.....	6.49	3.81	26.33	32.66	277.75	75.32
1961/62	156.25	146.74	.36	1.76	1.29	.69	1.08	1.23	3.92	2.84	.69	.....	8.05	3.27	22.60	29.50	233.71	39.78
1962/63	194.30	153.68	.45	1.84	1.33	.83	1.22	1.35	4.79	3.81	.71	.....	9.28	3.31	27.58	31.34	267.18	58.48
1963/64	260.53	195.57	.57	2.21	1.59	.98	1.43	1.47	5.43	4.66	.74	.....	9.28	3.84	30.97	31.85	259.06	50.86
1964/65	274.61	233.12	.57	2.44	1.48	.76	1.50	1.60	4.91	4.74	.85	.....	9.28	3.57	30.30	37.74	278.79	60.00

STATEMENT VII

Burlington Bay Skyway

Comparative Statement of Toll Collection Revenues and Expenditures

For the Fiscal Years Ending March 31, 1965 and March 31, 1964

	Year ending March 31, 1965	Year Ending March 31, 1964	Increase (Decrease)	Percentage
Revenues:				
Toll Revenue Earned:				
Class I vehicles	$ 685,560	$ 721,703	$(36,143)	(5.01)
Class II vehicles	61,046	51,080	9,966	19.51
Class III vehicles	119,016	57,269	61,747	107.82
Total Revenue Earned	$ 865,622	$ 830,052	$ 35,570	4.29
Plus—Tickets and tokens sold but not presented, less (1965) charge accounts outstanding	25,767	21,134	4,633	21.92
	$ 891,389	$ 851,186	$ 40,203	4.72
Add Premium U.S. Funds	5,818	6,396	(578)	(9.04)
Total Revenue	897,207	857,582	39,625	4.62
Expenditures:				
Toll operating staff salaries	$ 174,698	$ 144,547	$ 30,151	20.86
Travelling expenses	1,696	3,671	(1,975)	(53.80)
Office expenses and stationery and tokens supplied Garden City Skyway	(2,360)	15,258	(17,618)	
Light, heat, water, telephone, etc.	9,310	6,091	3,219	52.85
Maintenance of building	2,599	2,561	38	1.48
Maintenance of equipment	7,217	6,793	424	6.24
Rental of equipment	17,577	24,116	(6,539)	
	$ 210,737	$ 203,037	$ 7,700	3.79
Excess of Revenues over Expenditures	$ 686,470	$ 654,545	$ 31,925	4.88
Traffic:				
Class I vehicles	7,972,365	8,092,793	(120,428)	(1.49)
Class II vehicles	333,679	229,033	104,646	45.69
Class III vehicles	611,492	163,017	448,475	275.11
Total	8,917,536	8,484,843	432,693	5.10

Toll Rates:	Cash	Tickets
Class I vehicles (passenger cars and trucks under one ton capacity)	15c.	5c.
*Class II vehicles (passenger cars with trailers and trucks with two axles and more than one ton capacity	25c.	*
**Class III vehicles (trucks with three axles or more and public vehicles)	45c.	**

*On July 23rd 1964 ticket fare was reduced from 16⅔c. to 10c.

**On July 23rd 1964 ticket fare was reduced from 30c. to 15c.

STATEMENT VIII

Garden City Skyway

Toll Collection Revenue and Expenditures

Statement of Toll Collection Revenue and Expenditures for fiscal year ending March 31, 1965 and October 18, 1963 to March 31, 1964.

	Year Ended March 31, 1965	October 18, 1963 to March 31, 1964
REVENUE:		
Toll Revenue Earned:		
Class I vehicles	$ 494,121	$ 147,863
Class II vehicles	32,495	6,097
Class III vehicles	49,094	17,663
Total Revenue Earned	575,710	171,623
Plus—Tickets and tokens sold but not presented less (1965) charge accounts outstanding	2,826	8,864
	578,536	180,487
Add Premium U.S. Funds	12,753	2,902
Total Revenue	591,289	183,389
EXPENDITURES:		
Toll operating staff salaries	$ 134,347	$ 50,048
Travelling expenses	1,126	6,854
Office expenses and stationery and tokens	7,314	1,055
Light, heat, water, telephone, etc.	11,764	5,922
Maintenance of building	1,842	794
Maintenance of equipment	5,732	2,147
	$ 162,125	$ 66,820
Excess of Revenue over Expenditure	$ 429,164	$ 116,569
TRAFFIC:		
Class I vehicles	4,908,466	1,546,709
Class II vehicles	158,441	27,631
Class III vehicles	220,732	49,587
Total	5,287,639	1,623,927

LEGAL BRANCH

D. A. CROSBIE, B.Sc.F., Director, Legal Branch

Centralization of the department's legal staff which was commenced in 1964 has continued with the abolition of the position of Regional Solicitor in the London Region.

The solicitors in the main office of the department at Downsview prepare agreements and other legal documents and provide legal services and advice to the various branches of the department and when necessary assist and advise the regional solicitor in Toronto. The regional solicitor in Toronto will continue to approve deeds and other documents and advise the Toronto Central Region and District staff on legal matters.

INSURANCE AND CLAIMS SECTION

This section deals with all matters pertaining to insurance coverage carried by this and other departments, and is also responsible for the handling, negotiating and settling of various types of claims. The section investigates and supervises the settlement of Workmen's Compensation Third Party claims where injuries occur to government employees. There are other miscellaneous types of tortious claims which are also dealt with by this section.

VOLUME OF CLAIMS AND INVESTIGATION

The volume of claims and their various categories for the fiscal year under review (with comparative figures for 1963-1964) is as follows:

	1964-65	1963-64
Claims against department —non-repair of highway	567	657
Claims against department —miscellaneous liability	383	427
Claims by department —for damage to department property	4,515	3,830
Claims by department —for personal injuries to employees	63	57
Investigations of accidents —involving government vehicles	1,015	805
TOTALS	6,543	5,776

It will be noted that the number of claims for 1964-65 amounted to 767 in excess of 1963-64. The above figures do not include complaints on a variety of minor matters which were also investigated and resolved.

OPERATIONS BRANCH

J. B. Wilkes, P.Eng., Director of Operations

THE SIGNS AND BUILDING PERMITS SECTION

R. P. Bruce, Superintendent

***Fiscal Year 1964-65**

Building Permits:	
Applications received	4,759
Permits issued	4,439
Entrance Permits:	
Applications received	2,358
Permits issued	2,228
Encroachment Permits:	
Applications received	1,111
Permits issued	1,055
Sign Permits:	
Applications received	5,658
New permits issued	1,986
Permit renewals	3,633
Gasoline Pump Permits:	
Applications received	2,808
Permits issued	2,770

*NOTE: Licences are issued according to the calendar year, January 1st to December 31st.

VALUATION OF BUILDING PERMITS

DISTRICT	VALUE OF PERMITS ISSUED
Chatham	$ 9,836,472
London	3,501,720
Stratford	3,961,935
Hamilton	18,134,345
Owen Sound	2,692,576
Toronto	34,091,942
Port Hope	2,697,373
Kingston	3,932,798
Ottawa	2,461,000
Bancroft	857,755
Huntsville	3,357,000
North Bay	3,379,243
New Liskeard	702,800
Cochrane	392,700
Sudbury	1,977,100
Sault Ste. Marie	4,085,050
Fort William	1,364,353
Kenora	1,468,383
TOTAL	$98,894,545

FIELD ADVERTISING SIGN PERMITS

Fiscal Year April 1st, 1964 to March 31st, 1965

Number of Field Advertising Sign Permits issued for fiscal year	4,332
Value of Field Advertising Sign Permits issued for fiscal year	$51,634.00

NOTE: Permits are issued for the calendar year.

GASOLINE PUMP PERMITS

Fiscal Year April 1st, 1964 to March 31st, 1965

Number of Gasoline Pump Permits issued for fiscal year	2,770
Value of Gasoline Pump Permits issued for fiscal year	$27,540.00

NOTE: Permits are issued for calendar year.

CONSTRUCTION DIVISION

H. A. Tregaskes, P.Eng. — Construction Engineer

Construction continued in the fiscal year 1964-65 at the high rate of the past several years, and by the year's end a very large amount of work was accomplished. Much of it was concentrated on several major projects which had been underway for some time, including the Macdonald-Cartier freeway, the Ottawa Queensway, new Highway 403 and the Atikokan-Fort Frances section of Highway 11.

During the year continuous travel on the Macdonald-Cartier Freeway was provided for the first time from Windsor to the Quebec boundary, a distance of approximately 510 miles. Considerable work on this important trans-provincial highway was carried out in 1964-65 towards finishing it as a complete dual highway throughout its length, with the concrete paving of 44 miles of the north lane and 8.5 miles of dual lane construction in eastern Ontario, and 48 miles of the south lane in southwestern Ontario. The detailed intricate work of widening the Toronto by-pass section of the Macdonald-Cartier Freeway proceeded exceptionally well. The Ottawa Queensway was opened from Carling Avenue to O'Connor Street and good progress was made on the comparatively short section of the Queensway still to be completed. On Highway 403 the concentrated operations at Hamilton and Brantford proceeded favourably.

In northern Ontario, grading and structure work on the Atikokan-Fort Frances section of Highway 11 was so well advanced by the end of the year that the official opening of 87 miles of new highway was planned for June 1965.

Important work on the Queen Elizabeth Way in the vicinity of Burlington, St. Catharines and Vineland was carried out, improving traffic conditions in those areas.

Work on the Ontario approach to the new Macdonald-Cartier bridge over the Ottawa River progressed well, and work commenced on the Quinte Skyway, a major structure of slightly more than one-half mile over the Bay of Quinte.

In addition to the concentrated main projects of the department, the reconstruction of various highways and the building of a large number of structures was carried out throughout the province.



1959
Macdonald-Cartier Freeway (Hwy. 401) Avenue Road interchange
1964



Some of the most important work performed in 1964-65 was as follows:

SUMMARY OF NEW SECTIONS OF KING'S HIGHWAYS
Completed During Fiscal Year 1964-65

Hwy. No.	New 4-Lane Roads	Miles
7	Hwy. 400 to Bathurst Street	3.8
11	Orillia by-pass northerly	5.4
401	Toll Gate Road to Lancaster (completed north lane)	14.4
401	Lancaster to Quebec boundary	8.5
401	Tilbury by-pass to Kent Centre interchange (completed south lane)	15.0
401	Hwy. 4 to Kent-Elgin county line (completed south lane)	33.0
Ottawa Queensway	Carling Avenue to O'Connor Street	3.4
	Total	83.5

Hwy. No.	New 2-Lane Roads	Miles
11	Between Atikokan and Fort Frances	47.0
17	Keewatin westerly	9.6
41	Between Hwy. 401 and Quinte Skyway	2.1
101	East of Wawa	4.4
101	West of Chapleau	10.5
Sudbury-Timmins	Cartier southerly	8.5
	Total	82.1

NEW BRIDGES COMPLETED 1964-65

During the fiscal year 1964-65, the number of new bridges completed was 75

SOUTH-WESTERN AREA — Chatham, London, Stratford, and Owen Sound Districts.

Further progress was made towards the completion of the Macdonald-Cartier Freeway. The eastbound lane was opened to traffic between Tilbury east interchange and the Kent Centre interchange, a distance of 15 miles. The remaining section of the eastbound lanes in the district of London from Highway 4 to the Kent-Elgin line was completed and opened to traffic. Grade crossings were eliminated by underpasses at Kent County Road 9 (Scane sideroad) and Kent County Road 21 (Muirkirk sideroad). Grading contracts for the two service areas at Tilbury and the two west of Highway 4 were completed allowing the oil company lessees to proceed with the construction of the service areas and buildings. Resurfacing of Highway 401 was performed for a distance of approximately 13 miles to a point 1.5 miles west of the Dorchester road.

On Highway 3 a new bridge was opened to traffic at Payne's Mills.

On Highway 6 grading, drainage, granular base and hot-mix paving work was completed from Fergus northerly for 5.4 miles. A narrow bowstring structure was replaced along with much improved alignment and grade. Grading and paving were finished from Chatsworth to Dornock, as was the reconstruction work in both those towns.

On Highway 8 reconstruction was carried out from Stratford to north of Sebringville and by year's end base course pavement had been laid.

Hot mix paving was completed on Highway 9 from Mildmay to Walkerton for 6.4 miles which included grading, drainage, granular base and hot mix paving at the junction of Highways 4 and 9. On Highway 18 the new bridge over Wigle Creek was finished.

Grading, drainage, granular base, hot mix paving including soils cement stabilization was completed on Highway 19 from Kintore north limits to Uniondale for 5.3 miles, and also on Highway 19 resurfacing was carried out from Milverton to Tralee for 9 miles.

Work in the village of Grand Bend consisted of re-construction of Highways 21 and 81 through the village, and the provision of a much improved crossing over the Aux Sable River on Highway 21. Also, on Highway 21 reconstruction was begun for a 4.7 mile distance starting north of Goderich.

Grading, drainage, granular base and hot mix paving were completed at the junction of Highway 24 and County Road 69, three miles north of Eramosa on Highway 24 resulting in visibility improvement at the intersection. Considerable improvement was realized on Highway 39 by the reconstruction through the village of Belle River.

On Highway 86 grading, drainage and granular base was completed from Elmira westerly for 5.6 miles which improved the general grade and eliminated several sharp curves, also one large and three small narrow structures were replaced. Grading, drainage, granular base and hot mix paving was performed in the village of Lucknow.

The carry-over work on Highway 126, the new dual highway entrance from Highway 401 to London, was completed early in the season. On Highway 136 grading, drainage, granular base and hot mix paving from the intersection of Highway 24 to the north limits of Alton for 3.05 miles were finished. This work included extensive improvement to the storm sewer system as well as pavement widening in the village of Alton.

On Highway 402 further improvement was made with the completion of the Indian Road underpass and the Modeland Road interchange. The Indian Road crossing will provide a major north-south route for the city of Sarnia. The Modeland Road interchange will provide improved traffic interchange for Highways 402 and 7 and for the future Highway 40A (Sarnia by-pass).

Grading, drainage, paving and structure work was done from south of Mitchell to the north limits of that town. The work included a new C.N.R. overpass structure and extensive storm sewer work in Mitchell.

CENTRAL AREA — Toronto, Hamilton, Port Hope Areas.

The first section of the collector distributor three-way design which is being used on the Toronto by-pass section of the Macdonald-Cartier Freeway was completed from Hogg's Hollow to west of the Avenue Road interchange, providing a preview of the future appearance of Highway 401 through Metropolitan Toronto. During the year, several grading and structural contracts were in progress on the Highway 401 by-pass section between Avenue Road and west of Highway 400. Critical path scheduling was used and found to be invaluable in co-ordinating work and maintaining progress. The co-ordinate system of layout was tested and proved superior to more conven-

tional methods. In both these improved procedures, the department computer equipment played a large part. Easterly from Highway 10, a 3.8-mile section of Highway 401 concrete pavement was re-surfaced with a ¾" section of sand mix asphalt.

The year 1964 also saw both the completion of the controlled access highway to the Toronto International Airport and the widening of Dixon Road.

Good progress was made in widening to six lanes, the Q.E.W. from Highway 25 to the Freeman interchange, while resurfacing from Freeman to the Burlington Skyway was completed. Service roads adjacent to the Q.E.W. at Cushman Road and Eastman Road, and at Vineland to Jordan were completed. The interchange on the Q.E.W. at Niagara Street in St. Catharines was finished, greatly improving traffic movement.

In Hamilton, grading on four-lane Highway 403 was completed from Longwood Road to Aberdeen Avenue interchange, and the contract for granular base and hot mix paving was started. At Brantford, grading on two sections of Highway 403 was completed and two miles of adjacent grading and structural work commenced.

A new bridge was constructed over the Black River in Baldwin and Highway 2 was widened to a four-lane section in the village of Bronte.

Resurfacing was completed on Highway 3 from Jarvis to Nelles Corners and in the same vicinity a new structure and approaches were finished at McLennan's Creek.

A grade separation was completed on Highway 5 at Tansley.

On Highway 6, reconstruction to four lanes from Clappison Corners south to Highway 403 was done satisfactorily.

The section of Highway 7 from Bathurst Street to Highway 400 was widened to four lanes and except for a small amount of top course paving and minor grading work, was completed. Also, on Highway 7, a grade separation at Pleasant, west of Brampton, was finished.

Reconstruction of Highway 8 from St. David's, southerly, was started and old Highway 8, from St. David's to the Niagara Stone Road, was resurfaced and reverted to Niagara Township.

Work on the Etobicoke Creek bridge at Brampton and on the C.P.R. and C.N.R. bridges on Highway 9, and on Highway 50 Palgrave southerly was well underway at year's end with completion anticipated during the summer of 1965.

A contract for the widening of Highway 10 from Highway 5 northerly from Cooksville was commenced. This contract utilizes the existing C.P.R. underpass for the two southbound lanes of Highway 10, and an additional span using the existing abutment as a centre pier, will be constructed for the two northbound lanes. A contract for the widening of Highway 10 to four lanes from Brampton northerly to Victoria was awarded late in the fiscal year and is unusual in that it contains a two-mile section of experimental construction, which has been designed to evaluate different types and depths of cement-treated and asphalt-treated bases with the conventional granular base courses. Different pavement designs will also be evaluated. This work is being done in close colaboration with the Research Branch. On Highway 12 grading was begun on the Beaverton by-pass and the necessary structures were started.

Widening of Highway 20 from Drummond Road to the west city limits of Niagara Falls was begun under connecting link agreement with that city.

A contract for the partial excavation at the Carleton Street tunnel at the Welland Canal and St. Catharines was completed. This work provided valuable soils information required for the subsequent design of the tunnel.

Grading, granular base and hot mix paving work was carried out on Highway 33, through the village of Wellington in Prince Edward County.

The completion of the high-level structure over the Trent Canal at Rosedale, on Highway 35, and the paving of its approaches was realized in 1964 and in addition on Highway 35, structures were started over the Trent Canal at Fenelon Falls and in the village of Coboconk.

On Highway 36, a new structure was completed at Squaw Creek and grading and granular base practically completed from Lodies Creek to Secondary Highway 507.

EASTERN AREA — Kingston, Ottawa and Bancroft Districts.

Work on Highway 401 proceeded very well and with the completion of 30 miles of concrete pavement on the westbound lane westerly from Highway 38, continuous four-lane travel is now provided from Toronto to Gananoque. Concrete paving of 13.8 miles of the westbound lane from Cornwall to one mile east of Lancaster was finished and opened to traffic, as was the 8.3-mile section of dual four-lane construction from one mile east of Lancaster to the Quebec boundary. Grading of 11 miles of the westbound lane from Highway 16 to Iroquois was completed, while grading, drainage and structure were started on the 16-mile section of the north lane, from Iroquois to Altsville sideroad. Heavy rock construction commenced at Gananoque on a 3.5-mile section of the new location for Highway 401 between Gananoque and Brockville. By the end of the 1964 construction season, four interchanges and 11 bridges were completed on Highway 401 east of Cornwall. Contracts for the grading of two new service centre sites between Kingston and Napanee were substantially completed and the lessees began construction of the buildings and facilities.

On the Ottawa Queensway, concrete pavement was laid from Carling Avenue to O'Connor Street, 3.4 miles, and was open to travel. The Ottawa Queensway is now open from the west city limits to O'Connor Street, in the downtown area of Ottawa. Reconstruction of the north half of the Alta Vista Drive interchange was completed. Grading and drainage were completed to ½ mile east of Main Street, while work continued on the large structure over the Rideau Canal.

The building of the Ontario approach to the new Macdonald-Cartier bridge over the Ottawa River providing access to Sussex Drive and King Edward Avenue proceeded very well.

Easterly from Trenton in the vicinity of the RCAF base, very good progress was made in rebuilding Highway 2 to a four-lane road.

A grading, structure and paving contract between Highway 401 and the Quinte Skyway, partly on Highways 2 and 41 was completed early in the construction season.

Highway 42 was substantially improved between Forthton and Athens with the completion of a grading contract followed immediately by hot mix paving, and in Delta on the same highway, the bridge over Beaverly Creek was open to traffic.

On the West Carp by-pass on Highway 17, the grading on the 9.3 miles on the new right-of-way was completed.

Paving of Highway 60, from Wilno to Killaloe, and Highway 62 from Pembroke westerly 4.6 miles, was completed, as was the grading on Highway 62 from Killaloe northerly for 4.1 miles.

Grading and culvert work was almost completed on Highway 41 from Griffith southerly, and grading progressed well on Highway 60, from Algonquin Park Station easterly for 8.9 miles.

The foundation and sub-structure contract for the major structure over the Bay of Quinte, named the Quinte Skyway, was awarded late in the year and work on this project was started.

Resurfacing contracts were carried out on Highways 401, 2 and 7, east of the Cataraqui River, west of Kaladar, and west of Brockville.

The grading on 4½ miles of Development Road 588, north of Foxborough, was finished and hot mix paving placed the end of the season.

NORTHERN AREA — Huntsville, Sault Ste. Marie, Sudbury, North Bay, New Liskeard Districts.

On Highway 11, the work of widening to four lanes was continued from Orillia northerly for five miles and similar widening was started to as far north as the Severn bridge. On this project good progress was made on widening of three structures over the Trent Valley Canal and the west branch of the Severn River. Two carry-over grading and paving projects on Highway 11B, from North Bay southerly, were completed early in the season.

With the completion of a new high-level structure and approaches over the narrows of Atherly, on Highway 12, the Old Swing Bridge was eliminated, thus allowing uninterrupted flow of traffic on the highway and on the Trent Valley Waterway. At the Hogg River, on Highway 12, at the limits of the village of Victoria Harbour, an old structure was replaced by a reinforced concrete bridge and considerable improvement was made to the alignment and grade of the approaches.

In the city of Sudbury, on Highway 17, a grading, drainage, granular base, hot mix paving, sewers and watermains contract of some complexity was completed over a distance of 1.6 miles, thus improving the eastern gateway to the city with a modern four-lane highway. Grading, drainage and hot mix paving was completed on Highway 17 from about one mile west of Secondary Highway 563, northerly for 7.7 miles. The new Pancake River bridge was included in this project. Clearing was finished on 11.4 miles on Highway 17 from 8.8 miles north of Secondary Highway 563, northerly. Two grading, drainage and granular base contracts were in operation on Highway 17 from the junction of Secondary Highway 531 to Secondary Highway 630, a distance of 10.2 miles. A carry over of grading work from Secondary Highway 531, 4.1 miles east, was completed and a single course bituminous pavement was laid. Hot mix paving was completed on Highway 17 for 9.6 miles from Port Alexander to Coltan Lake.

The grading, granular base and hot mix paving work on Highways 35 and 60 from Hillside to Dwight was finished over a distance of 5.5 miles. This completes the reconstruction of Highways 35 and 60 from Huntsville to Dwight and Highway 60 through Algonquin Park to the Huntsville District boundary.

Reconstruction of Highway 64 from Alban easterly for 4.8 miles was started.

Grading and granular base and paving contracts were completed on Highway 60 from the Quebec boundary westerly for 8.5 miles.

On Highway 68, the grading, drainage and granular base operations were brought to completion from Birch Island village, southerly to La Cloche Channel, a distance of 4.3 miles, and a hot mix paving contract was completed over this and two previously completed grading contracts to the north, a total distance of 13 miles.

Work was begun on Highway 69, in the town of Bala, including grading, hot mix paving and connecting roads to bypass the main thoroughfare of the town and thus eliminate a severe traffic bottleneck. The contract includes a new C.P.R. underpass and a new structure over the Moon River.

On Highway 101, 10 miles of paving from 19 miles to 29 miles east of Foleyet was completed. Grading, drainage, and granular base was finished from 7.9 miles east of Wawa easterly for 4.4 miles to the junction of Secondary Highway 547 and northerly on Secondary Highway 547, 3.6 miles to Hawk Junction. This work included the Hawk Bay and MacLeod Bay structures. In addition, grading commenced at the junction of Secondary Highway 547 southerly for 7.6 miles. The bridge over the Michipocoten River is part of this contract. The grading contract on Highway 101 from Big Pine Lake westerly for 10.5 miles was completed, including the timber concrete structures over Little Pine Lake and Angus Creek. Grading work started on the next 11 miles, west of this contract, and clearing was also carried out on 18 miles of right-of-way, west of the new grading contract.

Considerable work was performed on the new Sudbury-Timmins highway with eight miles of grading completed from Cartier southerly and clearing started at 6.5 miles north of Benny. Near the north end, clearing was performed for 17 miles, from mile 16 to mile 33 south of Highway 101, while from approximately eight to 16 miles south of Highway 101, a new grading contract was commenced in late winter.

Reconstruction of Secondary Highway 550, from Highway 17 north to the Sault westerly for 2.3 miles was nearly completed by the year's end. This work included storm sewer drainage and hot mix paving.

The completing of an underpass under the Ontario Northland Railway on Secondary Highway 558 in the town of Haileybury was started in the fall.

Grading work of Secondary Highway 639 on the last 7.6 miles between 108 and Secondary Highway 546 was nearly completed. This work lies northwest of Elliot Lake.

NORTH WESTERN AREA — Cochrane, Fort William and Kenora Districts.

During the past year, construction in the northwest area was hampered by unusually wet weather. Despite this, considerable work was accomplished by year's end. The grading, drainage, granular base course, hot mix paving and structure work on Highway 11 from 5.4 miles east of Val Albert easterly to two miles east of Secondary

Highway 581 was completed in 1964. The contract for grading, drainage, granular base and hot mix paving for 5.3 miles in the Ansonville, Iroquois Falls and Montrock area which had begun the previous year was finished. On the Atikokan-Fort Frances Highway, part of Highway 11, grading and culverts and granular base operations were carried out over a distance of 48.7 miles. The two contracts covering 26 miles near Mine Centre were delayed due to wet weather, but completion is expected early in 1965. Granular base and hot mix paving work was finished in mid-summer from the Rainy Lake Causeway easterly for approximately 13 miles. The Bear Passage bridge, on Highway 11, located 16.0 miles east of the Rainy Lake Causeway, was completed and open to traffic, providing the first access by road to sections east of this structure. The impressive steel arch superstructure of the bridge over the Seine River was erected by late fall.

West of Fort William, a section of Highway 17 from 10.4 miles east to 5.2 miles west of English River was regraded to Trans-Canada Highway standards and then paved. Grading work proceeded during the year on the next 20.2 miles. A hot mix paving contract on Highways 11 and 17 from junction of Highway 130 westerly 11.6 miles, which was started in 1963, was finished by mid-season.

Two overhead structures west of Fort William, on Highway 17, over the main lines of the Canadian National and Canadian Pacific Railways were opened to traffic.

A heavy rock grading contract on Highway 17 from Keewatin westerly for 9.6 miles was completed and covered with one lift of hot mix pavement. At Dryden, on Trans-Canada Highway 17, the work of sub-excavation, granular base, storm sewers, curb and gutter and hot mix pavement through the town was finished. Work progressed very satisfactorily on 5.3 miles of grading and culverts on Highway 17 from Kenora easterly.

On Highway 105 one course of hot mix pavement was placed from 12 miles south of Ear Falls to Ear Falls, and grading and granular base work was completed from 12 miles south of Ear Falls southerly for 15 miles.

During 1964 a heavy resources and access roads program was carried out. With the completion of the English River bridge, on the Savant Lake Road, in the summer of 1965, it will be possible to drive as far north as Latitude 52°, the most northerly point accessible by road or rail in Ontario.

Work proceeded during the winter months on the Smooth Rock Falls to Pinard Road, a distance of 45 miles.

East of Cochrane grading operations over Secondary Highway 652 were well advanced before the shutdown of work in mid-winter.

TABLE SHOWING TOTALS OF WORK DONE

Class of Work	Number	Tons	Miles
Automatic signals at railway crossings	40	.....	.....
Bituminous hot mix pavement	.....	1,528,993.51	318.94
Bituminous mulch and cold mix	.....	105,350.30	1,302.10
Bituminous prime on gravel roads.....(gals.)	1,795,966	63,709.09(sand)	691.06

Class of Work	Number	Tons	Miles
Bituminous resurfacing old pavement		214,548.70	221.02
Bituminous surface treatment (gals.)	516,847	27,259.41(chips)	191.20
Bridges built	75		
Bridges painted	74		
Calcium dust layer—gravel roads		9,878.93	
Calcium for de-icing roads		99.30	
Concrete base pavement, asphalt top		25,039.93	4.79
Concrete pavement (sq. yds.)	1,545,312.16		80.88
Crushed gravel and stone (by contract)		7,176,899.74	1,045.52
Crushed gravel and stone (by Dept. forces)		687,008.70	7,543.82
Grading and culverts			379.82
Granular base on new grading		14,048,678.63	480.67
Granular base on old grading		478,556.24	183.24
New buildings erected this year	117		
Off-road parks maintained	253		
Roads snowplowed and kept open (King's Hwys.)			10,788.77
Roads snowplowed and kept open (Sec. Hwys.)			2,967.70
Roadside picnic places maintained	640		
Routine maintenance (King's Hwys.)			10,778.77
Routine maintenance (Secondary Hwys.)			3,006.00
Salt for de-icing roads (raw)		228,164.05	
Salt in sand, stockpiled		48,638.00	
Sand for winter maintenance		1,106,581.80	
Scale houses maintained	46		
Seeding by Department forces (acres)	2,783.30		
Shrubs received and planted	56,331		
Signs newly erected or replaced	75,275		
Snow hedges planted this year	1,000		
Snow fence erected, dismantled, stored			954.95
Traffic lights installed this year	41		
Weed control			10,790.57
Zone painting (King's Hwys.) (gals.)	255,027		7,908.80
Zone painting (Secondary Hwys.) (gals.)	15,298.5		580.20
Development roads built			84.65

MAINTENANCE DIVISION

E. J. Orr, P.Eng., Maintenance Engineer

Department's Crushing Plant

The department crusher from the Kenora District produced a total of 132,565 tons of crushed gravel; 42,599 tons in Cochrane District, 61,994 tons in Fort William District, and the balance at various locations in Kenora District.

Mulch Pavement

Mulch pavement mixed and laid by department forces totalled 67.1 miles in the following districts:

Port Hope	4.5 miles
Bancroft	0.5 "
Huntsville	20.1 "
North Bay	11.0 "
New Liskeard	27.5 "
Sault Ste. Marie	3.5 "
	67.1 miles

Zone Painting

Our 7 dual and 14 single-zone stripping machines painted 10,831 miles of King's and secondary highways, plus 158 miles of county roads.

As a result of tests carried out by the department in 1963, there were seven paint trucks converted to enable them to use the bead overlay method of zone striping in seven of our eighteen districts. The balance of the zone striping trucks were converted late in the year for use during the summer, 1965.

Experimental applications of thermoplastic traffic paints were continued this year on pedestrian crosswalks and stop blocks at various locations throughout the Toronto District. These applications are still being evaluated under actual traffic conditions.

Signs

During the year, district forces erected 75,275 signs of various types and sizes ranging from fingerboards, curve and stop signs to the large freeway and overhead metal signs.

Weigh Scales

Two new weigh scales were installed in 1964 at the following locations:

District 6: Highway 5 west of Cooksville
30-ton, 12′ x 10′ axle load to replace 30-ton, 10′ x 10′ axle load scale.

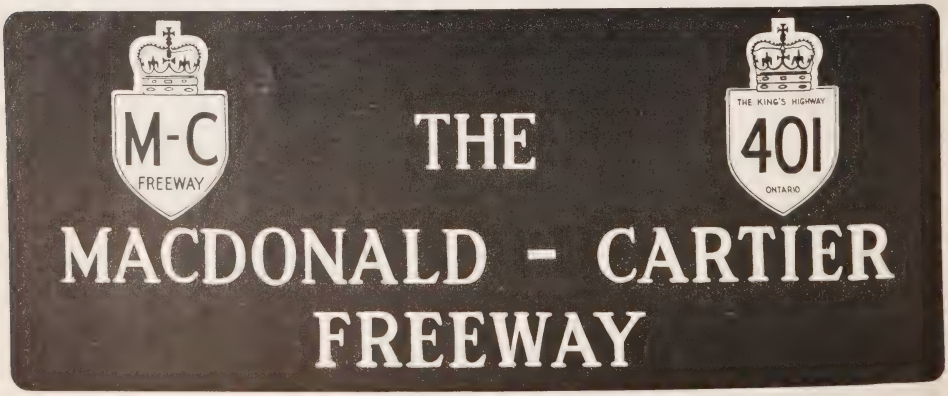
District 11: Highway 60, 3 miles east of Huntsville
30-ton, 12′ x 10′ axle load to replace 30-ton, 40′ x 10′ platform scale at junction of Highways 11 and 60, Huntsville.

Pavement Maintenance

The department's "pavement de-slicker" worked from July to October burning excess asphalt from sections of highway to correct flushing and slippery conditions. During this time the machine completed the treatment of some 16 miles of pavement.

Winter Maintenance

The winter of 1964–65 was the severest winter the province as a whole has experienced in recent years. Snowstorms were more frequent and below average temperatures



New highway signs on Highway 401. (Operations Branch — Maintenance Division)

prevailed with winter weather extending late into the spring. As a result, greater than average quantities of de-icing chemicals and abrasives were used.

On our Winter Works Program, which was approximately the same magnitude as in 1963, the districts successfully carried out such projects as clearing, grubbing, rock excavation, granular base, fencing, bridge repairs, tree trimming and removal and developing and improving roadside picnic parks.

BRIDGE MAINTENANCE AND INSPECTION

Inspection and Maintenance of Bridges

Approximately one half of the bridges under department jurisdiction were inspected by the Bridge Maintenance and Inspection staff. The district engineers were advised of necessary repairs and a summer maintenance program was formulated.

Some weakened bridges were replaced with structural plate pipe culverts, Bailey bridges, or new structures, all constructed by district forces.

Approximately thirty structural plate pipe culverts were constructed. These include: Massie Creek on Highway 2, Waterhen Creek on Secondary Road 576, Rat Lake Narrows on Secondary Road 549 and Pitch Creek on Secondary Road 590.

Various detour structures, consisting generally of Bailey bridges, were designed to permit new bridge construction. Approximately sixteen Bailey bridges were erected for this purpose. These include: The Gull River on Highway 35 at Coboconk, Aubrey Falls on Highway 127 and the Saugeen River at Durham on Highway 4.

Four bridges were reinforced with Bailey material, two provincial highway structures and two municipal road structures. These include: the Moore Falls bridge on Highway 35 (in which a sidewalk was incorporated), and the Lynde River bridge at Brooklyn which was reinforced after being damaged by vehicular collision.

Approximately twenty Bailey bridges were erected to replace weakened structures. These include: the Driftwood River on Secondary Road 577, Tonomo River on the Old Ferguson Highway north of North Bay and the Saugeen River on Highway 4 near Durham.

As a result of the low water level of Lake Ontario at Wolfe Island, it was necessary to sink a timber barge which acted as a ferry dock at Dawsons Point. A Bailey bridge was constructed from barge to shore for conveying traffic.

Bailey bridges were also erected for Department of Lands and Forests, St. Lawrence Seaway Authority, and various municipalities.

Three new bridges, designed by the Maintenance and Inspection Section, were constructed by district forces. These were the Mindemoya River at Providence Bay, Bear Creek at Elk Lake and the Nat River on Highway 101, west of Timmins. Also

designed by this section but constructed by contract, was the extension to the Moira River bridge on Highway 37.

Extensive repairs were performed on many structures by both district forces and contractors.

At the north bridge of the Belleville Bay Causeway on Highway 14, the entire truss end chords were rebuilt. It was necessary to support the deck system by means of Bailey bridge panels in order to maintain traffic while this work was in progress.

The original steel roller bearings on the Nipigon River bridge on Highways 11 and 17 were replaced by installing composite steel and rubber bearings.

At Reed Narrows on Highway 71 the existing timber truss was reinforced by means of steel girders. In addition, several of the trestles were replaced with fill.

The department awarded ten contracts for the repainting of steel bridges throughout the province, included was 3,020 lineal feet of the Burlington Bay Skyway bridge. The "Skyway" painting was let by two contracts, 2,060 lineal feet of deck truss on the south side and 960 lineal feet on the north side. Approximately 7,400 lineal feet of bridging and 11,500 lineal feet of handrailing were painted by contract. Approximately 800 lineal feet of bridging and 9,000 lineal feet of handrailing were painted by district forces. The total cost for all painting was approximately $325,000. All steel structures were given a pearl-grey colour. Bridges over navigable waters were painted a handrail green, except the "Skyway" bridges, which were covered with a lighter shade of green.

FORESTRY AND LANDSCAPE

Trees and shrubs in the amount of 62,272 were planted throughout fifteen districts. The plantings were carried out for purposes of creating snow hedges, general roadside improvement, roadside rest areas, as well as landscaping of various headquarters' buildings.

Six districts carried out special projects in saving large trees prior to construction by the use of the department's "tree saver" machine. A total of 1,017 trees were moved and replanted. The largest project took place in relation to the collector road system on Highway 401 in Toronto District where 624 trees were relocated.

Some 21,151,356 square yards of grass seeding were completed by contract as well as day labour methods. Seeding contracts were let for 9,196,968 square yards and included placing jute matting for erosion control. Further observation was carried out on the comparison of mulching materials, namely, straw and wood fibre.

With the introduction of an improved boom type 1,000 gallon sprayer, weed and brush control operations covered a total of 11,421 miles. Some northern districts are now showing the results of well-coordinated programs of brush cutting followed by herbicide treatment.

In the southern districts, forestry crews removed 8,094 trees to safeguard the travelling public. Utility companies were granted permission to remove 1,338 trees in relation to their lines located on the right of way.

ELECTRICAL SECTION

During the year April 1, 1964 to April 1, 1965 electrical equipment was installed as per the attached detailed lists. This was in addition to many miscellaneous jobs and all normal maintenance work.

New work is summarized below.

HIGHWAY LIGHTING—1,444 street lights of which 252 were the new "high mounted" lights mounted at 50′ above pavement.

TRAFFIC SIGNALS—48, these include 2 inter-connected systems and one "special" at R.C.A.F. gate, Trenton.

FLASHER BEACONS—74.

SIGN LIGHTS—84.

In addition to above, 115 street lights were removed due to construction.

HIGHWAY LIGHTING

Installations Put into Operation

April 1, 1964-March 31, 1965

DISTRICT 1—CHATHAM

401-W-8	Hwy. 401, Tilbury service area, (14) 400-watt mercury vapour units.
1-3B-9	Hwy. 3B (Ouellette Ave. extension) Windsor, (5) 400-watt mercury vapour units.
1-21-82-23	Hwys. 21 and 82, Hanles Corners, (6) 400-watt mercury vapour units.
1-79-28	Hwy. 79, village of Alvinston and old Hwy. 80, (3) 2-lamp, 4-foot fluorescent fixtures.
1-3B-29	Hwy. 3B, Cabana Rd. to Oulette Ave., (14) 400-watt mercury vapour units.
1-7-47	Hwy. 7 at Murphy sideroad, Sarnia, (1) 400-watt mercury vapour unit.
1-21-81-58	Hwy. 81 at 21 Grand Bend, (4) 400-watt mercury vapour units (temporary); (10) 2-lamp, 4-foot fluorescent fixtures.
1-2-61	Hwy. 2 at Bloomfield Rd., Chatham, (3) 400-watt mercury vapour units. District Highway Yards, (10) 400-watt mercury vapour units.

DISTRICT 2—LONDON

401-W-6	Hwy. 401 service area, (14) 400-watt mercury vapour units.
2-4-45	Hwy. 4 and County Road 4, (2) 400-watt mercury vapour units.
2-401-126-50	Hwy. 401 and Hwy. 126, London, (61) 400-watt mercury vapour units.
2-22-74	Hwy. 22 and County Rd. 19B, (3) 400-watt mercury vapour units.
2-3-76	Hwy. 3 and County Rd. 38, (3) 400-watt mercury vapour units.
2-401-85	Hwy. 401 at Elgin-Kent county line, (5) 400-watt mercury vapour units (temporary)

DISTRICT 3—STRATFORD

3-23-39	Hwy. 23, village of Atwood, (35) 2-lamp, 4-foot fluorescent fixtures.
3-8-40	Hwy. 8, Freeport to Preston (jct. Hwy. 401), (47) 400-watt mercury vapour units; (4) 250-watt mercury vapour units.
3-86-41	Hwy. 86, Hamlet of Molesworth, (9) 2-lamp, 4-foot fluorescent fixture.

District 4—Hamilton

4-2-3	Hwy. 2 and Howard Rd. in Aldershot area, (2) 400-watt mercury vapour units.
4-Q.E.W.-14	Q.E.W. and McLeod Rd., (2) 400-watt mercury vapour units.
4-Q.E.W.-38	Q.E.W. at Hwy. 25 interchange, (1) 400-watt mercury vapour fixture.
4-3A-69	Hwys. 57 and 3A (Becketts bridge), (3) 400-watt mercury vapour units.
4-6-5-80	Hwy. 5 and Hwy. 6, (8) 400-watt mercury vapour units.
4-Q.E.W.-96	Q.E.W. and Ashland Ave., St. Catharines, (5) 400-watt mercury vapour units.
4-406-99	Hwy. 406 at Westchester St., St. Catharines, (4) 400-watt mercury vapour units.
4-406-100	Hwy. 406 of Glendale Ave., St. Catharines, (20) 2-lamp, 6-foot fluorescent fixtures.
4-Q.E.W.-102	Q.E.W. at Niagara St., St. Catharines, (48) 400-watt mercury vapour units.
4-20-57-103	Hwys. 20 and 57, Bismark, (2) 400-watt mercury vapour units.
4-406-108	Hwy. 406 and Chestnut St., St. Catharines, (4) 2-lamp, 6-foot fluorescent fixtures.
4-Q.E.W.-403-141	Q.E.W. and Hwy. 403, Freeman interchange, (11) 400-watt mercury vapour units.
4-Q.E.W.-164	Q.E.W. and Jordan Rd. vicinity, (6) 400-watt mercury vapour units.
4-Q.E.W.-174	Q.E.W. and Prudhomme Blvd., (3) 400-watt mercury vapour units.
4-6-183	Hwy. 6 at County Rd. 22, (2) 400-watt mercury vapour units.

District 5—Owen Sound

5-6-9-5	Hwy. 6 and Hwy. 9, Arthur. Linen incomplete. (4) 400-watt mercury vapour units.
5-9-21-7	Hwy. 9 and Hwy. 21, Kincardine, (3) 400-watt mercury vapour units.
5-4-12	Hwy. 4 at Saugeen River bridge, 0.2 miles west of Durham, (2) 400-watt mercury vapour units.
5-6-21-14	Hwy. 6 and Hwy. 21, west jct., (4) 400-watt mercury vapour units.
5-10-89-15	Hwys. 10 and 89, Primrose, (4) 400-watt mercury vapour units.
5-90-16	Hwy. 90 at Tiffin St., (4) 400-watt mercury vapour units.
5-6-21-17	Hwys. 6 and 21 at County Rd. 2, west of Owen Sound, (2) 400-watt mercury vapour units.

District 6—Toronto

6-7-82	Hwy. 7 at Bathurst St., new section, (3) 400-watt mercury vapour units.
6-7-400-100	Hwy. 400 at Hwy. 7, (4) 400-watt mercury vapour units (high-test mounting)
6-401-103	Hwy. 401 at Simcoe St., Oshawa, (8) 400-watt mercury vapour units.
6-7-105	Hwys. 7 and 6, Concession Rd., Woodbridge, (2) 400-watt mercury vapour units.
6-2-108	Hwy. 2 and Fairport Rd., Dunbarton, (2) 400-watt mercury vapour units.
6-2-109	Hwy. 2 and Valley Farm Rd., Pickering, (2) 400-watt mercury vapour units.
6-7-112	Hwy. 7 at Dufferin St., Concord, (6) 400-watt mercury vapour units.
6-10-124	Hwy. 10, Etobicoke Creek bridge, Brampton, (2) 400-watt mercury vapour units.
6-122-149	Hwy. 122 with south service road and west entrance to Ford Plant, (6) 400-watt mercury vapour units.
6-401-275	Hwy. 401 and Ritson Rd. turn off, Oshawa, (4) 400-watt mercury vapour units.
6-7-279	Hwy. 7 at east and west approaches to railroad overpass, west of Keele St., (4) 400-watt mercury vapour units (temporary).
6-48-281	Hwy. 48, Hamlet of Baldwin, (4) 400-watt mercury vapour units.
6-10-283	Hwy. 10 and Steeles, (2) 400-watt mercury vapour units.
6-9-50-285	Hwys. 9 and 50, Peel County, (1) 400-watt mercury vapour units.
63-216	Hwy. 401 and Hwy. 400, (28) 400-watt mercury vapour units; (34) 700-watt mercury vapour units.
63-283	Hwy. 401 at Avenue Rd., (69) 400-watt mercury vapour units; (47) 700-watt mercury vapour units.
63-329	Hwy. 401 at Spadina Expressway, (37) 400-watt mercury vapour units; (37) 700-watt mercury vapour units.
62-252	Hwy. 401 and Avenue Rd. vicinity, (66) 400-watt mercury vapour units (removed)
63-54	Hwy. 401 and Don Mills, (12) 400-watt mercury vapour units (removed).

63-158	Hwy. 401 and Dufferin St. underpass, (172) 2-lamp, 4-foot fluorescent fixtures.
63-216	Hwy. 401 and Hwy. 400 vicinity, (104) 400-watt mercury vapour units; (31) 400-watt mercury vapour units (removed); (36) 150 incandescent units are installed and (removed).
63-329	Hwy. 401 and Dufferin St. vicinity, (63) 400-watt mercury vapour units (20-60′ poles); (36) 150-watt incandescent units were installed and removed.
64-95	Hwy. 7, west of Dufferin St. (detour), (6) 400-watt mercury vapour units, installed and removed.
64-108	Hwy. 401 and Keele St. vicinity, (27) 400-watt mercury vapour units.
64-34778	Hwy. 400 and Wilson Ave., (6) 400-watt mercury vapour units; (46) 150-watt incandescent units were installed and removed.

District 7—Port Hope

7-35-31	Hwy. 35 and Hwy. 121, Twp. of Fenelon, (4) 400-watt mercury vapour units.
7-7B-37	Hwy. 7B and Chemung Rd., County Rd. 5, (4) 400-watt mercury vapour units.
7-35-51	Hwy. 35, north entrance to Rosedale, W.P. 229-64, (3) 400-watt mercury vapour units.
7-35-52	Hwy. 35 and Hwy. 35A, Peace Valley, (2) 400-watt mercury vapour units.
7-7-7B-53	Hwy. 7 and Hwy. 7B, Fowlers Corners, (3) 400-watt mercury vapour units.
7-28-54	Hwy. 28 and County Rd. 1, (3) 400-watt mercury vapour units.
7-7-36-57	Hwy. 7 and Hwy. 36, (3) 400-watt mercury vapour units.

District 8—Kingston

E-6	E-6 (Texaco) service centre, (9) 400-watt mercury vapour units.
8-2-21	Hwy. 2 and R.C.A.F. main entrance, Trenton, (4) 400-watt mercury vapour units.
8-2-22	Hwy. 2 and the road to Repair No. 6, R.C.A.F. Base, Trenton, (4) 400-watt mercury vapour units.
8-7-37-28	Hwys. 7 and 37, Actinolite, (3) 400-watt mercury vapour units.
8-29-42-46	Hwys. 29 and 42, north of Brockville, (7) 400-watt mercury vapour units.

District 9—Ottawa

9-Q-9	Queensway, Ottawa, (124) 400-watt mercury vapour units; (6) 300-watt incandescent fixtures.
9-401-2-36	Hwy. 401 and Hwy. 2, east of Lancaster, tourist information centre, (13) 400-watt mercury vapour units (temporary installation).
9-7-15-52	Hwys. 7 and 15 at Stittsville Station Rd., W.P. 525-63, (3) 400-watt mercury vapour units.

District 11—Huntsville

11-400-20	Hwys. 400 and 12, Medonte Twp., east of Coldwater, (2) 400-watt mercury vapour units.
11-121-38	Hwy. 121, town of Haliburton, (2) 400-watt mercury vapour units.

District 13—North Bay

13-11-16	Hwy. 11 and Union St., Sundridge, (2) 400-watt mercury vapour units.
13-17-17B-19	Hwy. 17 and Hwy. 17B, North Bay by-pass northwest of city, (4) 400-watt mercury vapour units.
13-11-17-11B-25	Hwy. 11 and Hwy. 17 at Hwy. 11B (Algonquin Ave.), North Bay, (4) 400-watt mercury vapour units.

District 18—Sault Ste. Marie

18-17-3	Hwy. 17 and Garden River Rd., White River, (5) 400-watt mercury vapour units.

District 19—Fort William

19-11-17-590-5	Hwy. 11 and Hwy. 17, Kakabeka Falls Secondary Hwy. 590, Murillo, (2) 175-watt mercury vapour units.

District 20—Kenora

20-71-4	Hwy. 71 through the improvement district of Sioux Narrows, (22) 250-watt mercury vapour units.
20-598-604-5	Hwy. 598-604, north of Kenora, (11) 250-watt mercury vapour units.

TRAFFIC SIGNALS

Installations Put into Operation

April 1, 1964-March 31, 1965

District 1—Chatham

1-2-3	Hwy. 2 and Walker Rd., Windsor fixed time (temporary)
1-3B-13	Hwy. 3B and Eugenie Ave., Windsor, fixed time (temporary)
1-98-16	Hwy. 98 and Walker Rd., Windsor, fixed time (temporary)
1-21-38	Hwys. 21 and 81, Grand Bend, fully actuated.
1-7-44	Hwy. 7 and Murphy sideroad, Sarnia, fully actuated. Walker Rd. and Foster Ave. (semi-actuated), installed by D.H.O., paid for by others.

District 2—London

2-2-17	Hwy. 2, 1 mile east of Ingersoll, fixed time (temporary).

District 3—Stratford

3-8-8	Hwy. 8 and Pioneer Tower Rd., fixed time.

District 4—Hamilton

4-5-30	Hwys. 5 and 6, Clappison's Corners, fully actuated.
4-Q.E.W.-40	Q.E.W. and Hwy. 8 at south service road, fully actuated.
4-Q.E.W.-42	Q.E.W. at Ashland Ave., St. Catharines (interconnected system), 1 master, fixed time, 1 fixed time.
4-3-61	Hwy. 3 at Gorham Rd., fully actuated.
4-Q.E.W.-73	Q.E.W. and Niagara St., St. Catharines (interconnected system), (1) master fixed time, (2) slave fixed time.
4-6-91	Hwy. 6 and College Ave., Guelph, fully actuated.
4-2-92	Hwy. 2 at Howard Ave., Burlington, fully actuated.
4-Q.E.W.-93	Q.E.W. at McLeod Rd., Niagara Falls, fully actuated.
4-20-96	Hwy. 20, city of Niagara Falls, fixed time.
4-20-99	Hwy. 20 and Drummon Rd., Niagara Falls, fixed time.
4-Q.E.W.-100	Q.E.W. and Jordan Rd., semi-actuated.

District 5—Owen Sound

5-9-6	Hwys. 9, 10, and 24 (Broadway and First St.), village of Orangeville, fixed time (connecting link).
5-4-7	Hwy. 4 at Saugeen River bridge west of Durham, temporary, semi-actuated and fully actuated.

District 6—Toronto

6-27-21	Hwy. 27 and Rexdale Blvd., Etobicoke Twp., fully actuated, plus 2 g.2 timers.
6-5-22	Hwy. 5 and Dixie Rd., fully actuated.
6-2-26	Hwy. 2 and Dixie Rd., Port Credit, fully actuated.
6-7-68	Hwy. 7 and Keele St., Vaughan Twp., fixed time (relocated).
6-401-72	Hwy. 401 and Keele St., east and west ramps and Downsview Ave., fixed time, signals were relocated twice.
6-401-93	Hwy. 401 and Weston Rd., north-east leg, semi-actuated.

6-10-96	Hwy. 10, Nanwood Dr., Brampton, fully actuated.
6-7-111	Hwy. 7 and Dufferin St., Concord, fully actuated and fixed time.
6-Dixie Rd.-122	Dixie Rd. and Rametown Dr., fully actuated.
6-122-123	Hwy. 122 with south service road and west entrance to Ford Plant, fully actuated.
6-Q.E.W.-145	Intersection — old and new Dixie Rd., north of Q.E.W., fully actuated.
6-10-146	Hwy. 10 at Mincola Rd., fully actuated.
6-Q.E.W.-149	Q.E.W. and 9th line south service rd., fully actuated.
6-12-150	Hwy. 12 (Brock Rd.) and Mary St., town of Whitby, connecting link, fixed time.
6-10-152	Hwy. 10 and Steeles Ave., fully actuated.
6-10-153	Hwy. 10 and Upper Middle Rd., Cooksville, fully actuated.
6-2-154	Hwy. 2 at Kendalwood, Gerrard, Whitby, fully actuated.
6-2-156	Hwy. 2 and Thickson Rd., Whitby, fully actuated.

District 8—Kingston

8-2-1	Hwy. 2 and Steeles Rd. (6R.D. Rd.), fully actuated.
8-2-2	Hwy. 2 at R.C.A.F. Station entrance, Trenton, fully actuated with fire pre-amption.

District 9—Ottawa

9-401-31-3	Hwys. 401 and 31, north of Morrisburg, removed the fully actuated system and installed a fixed system.

District 11—Huntsville

11-35-9	Hwy. 35 (old) and one-lane bridge, Dorset, fixed time (temporary).

District 13—North Bay

13-11-2	Hwy. 11 (Algonquin St.) and North Bay by-pass, fully actuated.

FLASHER BEACONS

Installations Put into Operation

April 1, 1964-March 31, 1965

District 1—Chatham

1-402-14	Hwy. 402 and Hwy. 7 east of Sarnia, (1) amber flasher on sign post.
1-21-80-27	Hwy. 21 and Hwy. 90, Oil City, (2) red flasher on pedestal.
1-40-80-30	Hwy. 80 and Hwy. 40, Courtright, (1) red flasher on pedestal.
1-2-98-31	Hwy. 2 at 98 Grand Marian, (4) amber flashers on warning signs (temporary).
1-2-32	Hwy. 2 at Belle River Rd., (2) red flasher on pedestal.
1-2-33	Hwy. 2, ¼ mile east of Belle River Rd., (1) amber flasher on wood pole.
1-98-34	Hwy. 98 and Merlin town line, (2) red flasher on pedestal.
1-79-35	Hwy. 79 and Florence town line, (1) red flasher on pedestal.
1-401-36	Hwy. 401 and Scane side road, (6) amber flasher on sign post (temporary).
1-401-37	Hwy. 401 and Lees side road, (6) amber flasher on sign post (temporary).
1-401-38	Hwy. 401 and Highgate Rd., (6) amber flasher on sign post.

District 2—London

2-126-33	Hwy. 126 and Commissioners Rd., leg "D", (1) amber flasher on pedestal.
2-126-34	Hwy. 126 and Commissioners Rd., leg "A", (1) amber flasher on pedestal.
2-401-126-41	Hwys. 401 and 126, (1) amber flasher on pedestal.
2-85-43	Hwy. 85 at St. Jacobs Rd., (1) red flasher mounted on pedestal.
2-401-44	Hwy. 401 at Elgin County line, (1) amber flasher mounted overhead.
2-126-45	Hwy. 126 at Hamilton Rd., (1) amber flasher on pedestal.

District 3—Stratford

3-85-22	Hwy. 85 and Waterloo County Rd. No. 2, (1) red flasher on pedestal.

District 4—Hamilton

4-3A-57-62	Hwys. 3A and 57, Becketts bridge, (1) red flasher on pedestal.
4-8-81	Hwy. 8 at Jordon, (1) amber flasher on pedestal.
4-57-20-82	Hwy. 57 at Hwy. 20, (2) red flashers on pedestal.
4-53-83	Hwy. 53 at Fiddlers Green Rd., (2) red flashers on pedestal.
4-25-84	Hwy. 25 at Milton, (2) red flashers on pedestals.
4-7-85	Hwy. 7 at Norval, (2) amber flasher on checkerboard sign.
4-2-20-86	Hwy. 2 at Hwy. 20, (1) amber flasher on keep-right sign.
4-52-87	Hwy. 52, 500 ft. south of Copetown, (2) amber flasher on warning sign.

District 5—Owen Sound

5-27-93-22	Hwy. 27 and Hwy. 93, Waverley, (1) red flasher on pedestal.
5-4-23	Hwy. 4 at Saugeen River bridge (detour), (2) amber flashers on pedestal.

District 6—Toronto

6-50-84	Hwy. 50, King St., Bolton, (2) amber flashers on wood pole.
6-7-85	Hwy. 7 at Bathurst St., west of Langstaff, (1) amber flasher on pedestal.
6-10-88	Hwy. 10, subway and school crossing, Port Credit, (1) amber flasher on local pole.
6-2-89	Hwy. 2 and Bronte Rd., (2) red flashers on pedestal.
6-9-90	Hwy. 9 at west of Main St., "Schomberg", (1) amber flasher on wood pole.
6-9-50-91	Hwy. 9 at Hwy. 50, (2) red flashers on wood pole.

District 7—Port Hope

7-28-27	Hwy. 28 and River Rd., Young's Point, (1) amber flasher on pedestal.
7-35-35A-31	Hwys. 35 and 35A, Peace Valley, (1) boulevard red flasher on pedestal.
7-28-106-32	Hwy. 28 at 106 Dale County Rd., (1) red boulevard flasher on pedestal.

District 8—Kingston

8-41-502-29	Hwy. 41 and Hwy. 502, (2) red flashers on pedestal.
8-14-588-30	Hwy. 14 at Development Rd. 588, north entrance to Foxboro, (1) red flasher on pedestal.

District 9—Ottawa

9-34-24	Hwy. 34 at Glengarry Co. Rd. 18, (1) 4-way overhead red and amber flasher on sideroad.
9-401-26	Hwy. 401 and forced road (temporary detour), (1) amber flasher.
9-2-27	Hwy. 2 and forced road, (1) red flasher on pedestal.
9-Q-28	Queensway at Kent Rd., (2) amber flashers on pedestal.
9-Q-29	Queensway at Metcalfe Rd., (2) amber flashers on pedestal.

District 13—North Bay

13-654-5	Hwy. 654 at Nipissing, (1) amber flasher on sign board.

District 14—New Liskeard

14-66-11-7	Hwy. 11 and Hwy. 66, on Hwy. 11 approach to Kenogami Wye, (1) amber flasher on pedestal.

District 20—Kenora

20-11-71-2 Hwys. 11 and 71, (1) red flasher on pedestal.

SIGN LIGHTING

Installations Put into Operation

April 1, 1964-March 31, 1965

District 4—Hamilton

4-Q.E.W.-403-17 Q.E.W. at Hwy. 403 interchange structure, (14) 6-foot fluorescent fixtures; (2) 8-foot fluorescent fixtures.

District 6—Toronto

6-401-65 General sign lighting, Hwy. 401 reconstruction, (14) 8-foot fluorescent fixtures; (8) 6-foot fluorescent fixtures.

6-48-401-67 Jct. Hwy. 48 and Hwy. 401, (2) 8-foot fluorescent fixtures.

6-401-73 Hwy. 401 at Renforth Dr., (2) 8-foot fluorescent fixtures.

6-Dixie Rd.-74 Dixie Rd. at Indian Line, (2) 8-foot fluorescent fixtures.

District 9—Ottawa

9-Q-9 Queensway, Kirkland to O'Connor, (6) 6-foot fluorescent fixtures on cantilever sign.

9-Q-10 Queensway at Alta-Vista, (24) 6-foot fluorescent fixtures; removed (4) 8-foot fluorescent sign light fixtures.

District 14—New Liskeard

14-66-8 Kenogami at Hwy. 66, (4) 6-foot fluorescent fixtures; (2) 8-foot fluorescent fixtures.

MATERIALS AND TESTING DIVISION

A. RUTKA, P.Eng., Materials and Testing Engineer

On July 1, 1964, the name of the division was changed from Materials and Research to Materials and Testing, upon the formation of the Research Branch. The Research Branch is now responsible for all research activities of the department. Close co-operation is being maintained, and the facilities and personnel of the division will continue to be utilized on research projects.

The Materials and Testing Division is a service unit providing a technical service in connection with the planning, design, construction and maintenance of highways. Soils and granular surveys and quality control inspection and testing are carried out by the five regional offices. The central laboratory at Downsview, in addition to performing the routine testing for the Toronto region, is responsible for the testing and evaluation of many manufactured products purchased and used by the department.

The work of the division may be grouped into the following categories:

1. Pre-engineering.
2. Quality control and inspection.

3. Physical and chemical evaluation and testing.
4. Special investigations.
5. Training.

Materials and Testing personnel obtain and provide data on many design, construction and maintenance problems, and assist in the revision of construction and material specifications.

Pre-Engineering

The regional staff carry out soils, granular and performance surveys for planning and design purposes. The performance surveys are undertaken during all periods of the year, but are particularly significant during the frost heave and spring periods when the subgrade is at its weakest state. Pedological and subgrade checks with power augers, are undertaken to evaluate the subgrade and to arrive at pavement designs; to determine the availability and suitability of granular materials, and to provide the Road Design office with adequate information and recommendations from which to estimate quantities for contract purposes. Increasing use is being made of the Benkelman Beam, to evaluate the strengthening requirements of existing pavements.

A total of 194 soils design reports for Kings' highways was prepared, covering a distance of 749 miles, and 80 municipal reports covering 256 miles.

About half of the mileage of Kings' highways was reviewed to record the performance of the pavements, for the purposes of determining the treatment required for projects being considered for reconstruction or for long-term planning studies.

The number of seismic surveys has increased over the previous year. These surveys are undertaken in relatively inaccessible areas, where borings are not feasible, to determine the depth of overburden and the rippability of rock formations. A total of 21 seismic projects were undertaken covering 52 miles of line. Air photo interpretation projects has also increased, due to the increase in road construction activities in the north. Air photos are primarily used to locate granular materials, and to type the terrain, as an aid to subsequent field investigations. A total of 33 projects were reviewed.

Foundation investigations for bridge sites, patrol garage sites and for the determination of the stability of cuts and embankments, are carried out by the Foundation Section from the central office. Recommendations concerning bearing capacities of the subsoil, length and type of piles, dewatering requirements, settlement and stability, are provided to the Bridge office for foundation design purposes.

As in previous years, the work load exceeded the capacity of the staff, and several projects were assigned to consultants. The investigations may be broken down into the categories as shown in Table I.

One of the major projects carried out in the past fiscal year was the slope design for the Carlton Street tunnel, under the Welland canal at St. Catharines. Instrumentations consisting of piezometers and slope indicators were installed to study the actual performance of the slope, so that proper evaluation of the factor of safety could be carried out as construction proceeded.

The engineering office at Downsview maintains a record of the suitability of all granular materials sampled and tested, for the purposes of preparing strip maps for contract purposes, and for future performance studies. The strip maps show the location and suitability of each source for contract purposes. There are 12,350 pits and quarries recorded on the inventory. The central laboratory processed a total of 3,338 granular and aggregate samples, and the regions, 2,508. A total of 124 strip maps were prepared during the year, involving 2,000 pits and quarries.

Quality Control and Inspection

The regional staff through the Soils and Materials Subsections, provide technical advice and guidance to the district and municipal staff, on the uses and suitability of soils and aggregates, and on any quality control problems that arise during the course of the work, on asphalt and concrete mixtures. Temporary laboratories are assigned

TABLE I

Foundation Investigations

	Section	Consultants
Structures (King's highways)	87	53
Structures (municipal)	2	...
Stability investigations	4	...
Field tests and instrumentations	6	...
Patrol yards—garages	15	6
Total Number of Projects	114	59

Drilling

Drilling in soil	15,540 feet	12,571 feet
Drilling in rock	1,683 feet	2,415 feet

The following laboratory tests were performed on the investigations carried out by the section:

Classification	910
Atterberg limits	1,719
Natural moisture content	2,874
Density	879
Unconfined compression	693
Unconsolidated undrained triaxial	75
Undrained triaxial with pore pressure measurements	26
Direct shear	15
Consolidation	59
Organic content	24
Specific gravity	9

o areas where the work is concentrated and where a fast testing service is required. Each region has a mobile compaction laboratory which is used to determine the suitability of compaction, and of the bituminous mixture for each project. The regional

personnel inspect ready-mix and asphalt plants at regular intervals, to determine whether they comply with specification requirements.

Performance rating surveys were continued on newly constructed pavements, and the data was placed on punched cards, so that an analysis could be made on the factors that influence pavement performance.

Inspection and technical assistance on testing materials and on construction problems was provided on 137 grading and drainage projects, 163 paving projects, 116 structure projects, and on 122 miles of 12 feet wide concrete paving.

Physical and Chemical Testing and Evaluations

Control of the work and of the materials for the highway construction and maintenance program has become a big operation, involving both the district forces and the staff of the Materials and Testing Division. The district personnel perform tests in the field to obtain information quickly on the quality of the work. Tests to determine the quality of the materials, and more complex control tests, are performed by Materials and Testing personnel in the central, regional, temporary and mobile laboratories. Most of the control testing is performed by the regional laboratories.

The magnitude of the testing program at the central and at the regional, temporary and mobile laboratories is illustrated by the following statistics on some of the major items:

	Central Lab.	Regional Labs.
Soils and aggregates	13,133	6,621
Petrographic examinations	3,252	.....
Post-sulphate examinations	2,456	.....
Concrete mix designs	457	.....
Concrete cylinder tests	11,434	12,579
Concrete beam tests	912	455
Cement samples	643	.....
Chemical admixtures	192	.....
Examinations of hardened concrete	95	.....
Bituminous mix designs	37	99
Bituminous plant checks	749	1,489
Extraction tests	1,002	3,101
Asphalt samples	3,369	.....

In addition the five mobile bituminous compaction control units took 465 compaction checks, 712 plant checks and 1,426 extraction and gradation tests.

Quality control of manufactured products was continued by inspection at the various plants, and involved the testing of 1,120 samples of a variety of products, including such items as prestressing wire strand, grader and snowplow blades, concrete and corrugated metal pipe, files, shovels, fencing, concrete poles and aluminum sign structures.

The amount of chemical testing increased over the previous year. In addition to evaluating and recommending several types of new materials for purchase, quality control testing was carried out on a wide variety of items. Municipalities are making greater use of the testing facilities and of the technical service that is available to them. The Chemical Section at the central laboratory carried out 29 performance evaluations on various materials, and tested nearly 2,200 samples, representing over 100 types of materials. The details of the tests and evaluations are shown in Table II.

TABLE II

Materials Tested	No. of Samples	Evaluations
Antifreezes	6	Coating systems for sander boxes
Blankets	2	Primer-sealers for galvanized steel
Bridge primers	102	Overlaid coloured plywood
Bridge paints	64	Salt spray drift
$CaCl_2$ solutions	146	Clear coatings for reflective sheeting
Cement	87	Winter maintenance painting
Concrete admixtures	319	Bridge paint systems
De-icers	5	Beaded signs
Deodorizers	8	Zinc rich paints
Equipment paints	57	Porcupine repellent paints
Fertilizers	0	Plastic traffic markers
Fluorescent sheeting	4	Fluroescent safety cones
Grass seed	41	Screen pastes
Guide rail paints	38	Traffic paints
Herbicides	22	Guide rail paints
Luminaires	1	Primer application methods
Paint brushes	27	Luminaires
Reflectorizing beads	22	Pretreatment of metals
Salt	79	Neoprene and chlorinated rubber coatings
Soils	101	Tunnel coatings
Safety helmets	15	Decals
Safety clothing and fabrics	29	Automotive solvents
Safety cones and flags	8	Safety helmets
Sign materials	116	Safety clothing
Traffic paints	310	Warning flags
Thinners	20	Reflective and fluorescent sheetings
Tarpaulins	16	Bailey bridge coatings
Warning lights	4	Water contamination
Well water	294	Coatings for picnic tables
Water for concrete	22	
Paint spray respirators	18	
Aggregates	101	
Paint and Scotchlite strippers	3	
Axe handles	7	
Measuring tapes	1	
Glass beaded signs	5	
Clear finishes	15	
Exterior paints	8	
Stains and dyes	14	
Miscellaneous	44	
Total	2,181	

Special Investigations

Special investigations of the division were numerous and broad in scope. Most of the projects were undertaken to solve problems originating in the Operations Branch. Some of these projects were carried out by staff members under the direction of the Director of Research Branch, and others, particularly where the problems were more local, were carried out by the Materials and Testing Division.

Following the discovery of severe stripping of the binder courses throughout the province, trial field work of sand asphalt mixes on granular grades, resulted in this type of hot mix course being specified on most new paving jobs. Further studies as to

the probable causes of stripping are continuing in co-operation with the Research Branch.

Considerable field work was undertaken to determine the suitability of automatic screed control pavers, and the improvement in riding qualities of the pavement. Sufficient improvement in riding characteristics was noted to specify the automatic screed pavers on about 50% of the work.

As a result of the bridge deck deterioration problem, waterproofing with hot mastic asphalts or with the emulsion glass fibre treatment, was specified two years ago. These treatments are not foolproof, and other systems are being studied. The normal bridge deck construction requires three inches of asphalt over the concrete deck. A crew was assigned to take cores of the deck and to determine the deterioration of the concrete. This information is provided for the Bridge Maintenance section, and the Road Design office, in order that restoration work can be planned and programmed. About 100 bridge deck investigations were undertaken during the fiscal year.

Pile driving data was collected on 61 sites, to determine if there is any correlation between the type of piles, driving energy and the properties of the subsoil. It is anticipated that with the collection of more data, the best type of pile for certain situations can be selected, and its performance can be predicted.

A program of studying the effect of pore pressures on the bearing capacity of piles had been undertaken. Some important results have already been obtained regarding the choice of pile type in stiff clays, and the magnitude of pore pressure set up by pile driving in soft clays.

In order to establish good control limits for concrete, a computer program was instigated with the intention of developing a system of rapid analysis of normal quality control tests. It is expected that this system will provide the Department with a much deeper concept of quality control in minimum time.

Alkali reactive aggregates continued to receive attention, due to their wide spread occurrence in the province. Many quarry sources were investigated, and evaluated, and certain strata in some quarries were isolated as being undesirable. In other sources, the aggregates were permitted for concrete work, provided that a low alkali cement was used.

Training

Materials and Testing personnel participated in training courses sponsored by the Training Committee for construction and municipal staff. The division was involved with 19 courses, which required the preparation of notes, the presentation of lectures, and the marking of examination papers. In addition, one course was given on air photo interpretation to personnel from the Planning and Design Branches, and Materials and Testing Division.

Seminars were also held at the district level to familiarize the construction staff with revisions to the specifications, and with new construction materials and techniques.

The Materials and Testing Division prepared and up-dated various technical notes on concrete technology, for use as a guide to the construction staff, and also revised the manual, "Guide for Soils Field Inspectors".

The number of courses has increased each year, thus reflecting the need and interest in quality control by the Department, and by the municipalities.

MUNICIPAL ROADS DIVISION

J. P. Howard, P.Eng., Municipal Engineer

The 1964 subsidizable expenditures by the municipalities increased by approximately $24,500,000.00 over 1963 and by $119,168,000.00 over 1955, as shown in the following table:

EXPANSION OF AID TO MUNICIPALITIES (IN $1,000's)

YEAR	TOTAL EXPENDITURE BY MUNICIPALITIES	SUBSIDIES UNDER THE HIGHWAY IMPROVEMENT ACT	DEVELOPMENT ROAD EXPENDITURES	TOTAL AID
1955	$ 78,987	$39,773	$ 3,876	$ 43,649
1956	92,048	46,005	4,732	50,737
1957	101,871	51,484	5,783	57,267
1958	108,620	54,025	6,927	60,952
1959	124,391	62,362	7,880	70,242
1960	140,438	70,444	8,135	78,759
1961	142,010	71,542	7,786	79,328
1962	151,686	76,231	7,718	83,949
1963	173,693	88,041	11,109	99,150
1964	198,155	97,300	14,455	111,755

SUBSIDIES SECTION

C. R. Wilmot, P.Eng., Subsidies Engineer

975 Municipalities and 42 Indian Reserves received subsidy under The Highway Improvement Act for expenditures made in 1964. The aggregate amounts were as follows:

TYPE OF MUNICIPALITY	ROAD MILEAGE	APPROVED APPROPRIATIONS	APPROVED EXPENDITURES	SUBSIDY
Metro. Toronto				
Roads	362.8	$ 39,750,000	$ 38,762,524	$19,381,262
Subway	.....	20,000,000	17,375,569	5,791,856
Counties*	9,198.7	43,141,300	37,118,003	20,361,773
Townships**	52,938.0	61,498,160	53,234,002	31,228,752
Urbans	10,178.1	68,013,052	51,665,358	20,535,895
TOTALS	72,677.6	$232,402,512	$198,155,458	$97,299,539

* Includes Suburban Commissions.
** Includes Improvement Districts and Indian Reserves.

METROPOLITAN TORONTO

(*Municipality of Metropolitan Toronto Act*)

An amendment to The Highway Improvement Act passed in 1963 authorized the payment of subsidy at the rate of 33⅓% on expenditures for subway right-of-way construction made on or after April 1st, 1964, on the Bloor-Danforth subway. The expenditure approved for this work in 1964 was $17,375,569, and the subsidy paid was $5,791,856.

Subsidizable expenditures made by Metropolitan Toronto for road and bridge work pursuant to The Municipality of Metropolitan Toronto Act were less than those of 1963 by approximately $2,700,000.

A breakdown of the 1964 expenditures follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$27,705,331	$2,584,773	$30,290,064
Bridges and culverts	6,307,806	162,884	6,470,690
Winter control		2,001,770	2,001,770
Total Approved Expenditures	$34,013,137	$4,749,387	$38,762,524

The following works formed a major part of the expenditure in 1964:

Structures completed		13
Structures under construction		4
Elevated Expressway (F. G. Gardiner)		
	Portion completed	1.83 miles
	Under construction	1.25 "
Road Construction:	Completed (Don Valley Parkway, Spadina Expressway)	4.19 "
	Under construction (Don Mills Rd. Extension and Spadina Expressway)	7.82 "
Existing Roads:	Reconstructed	9.01 "
	Under construction	1.90 "
Pavement widening completed		1.46 "
Resurfacing of existing pavement		3.43 "
Intersection improvements		25
Major repairs to bridges		5

COUNTY ROADS

(Part VII, The Highway Improvement Act)

The 1964 expenditures on county and suburban roads indicate a modest increase over 1963 figures of approximately $650,000 with a corresponding increase in government subsidy of approximately $575,000. The overall percentage of subsidy to expenditure increased from 54.24% in 1963 to 54.85% in 1964 indicating a higher percentage on increase in bridge and culvert expenditure compared to road expenditure.

A breakdown of the 1964 expenditure follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$19,257,842	$ 9,321,078	$28,578,920
Bridges and culverts	5,685,589	323,649	6,009,238
Winter control		2,529,845	2,529,845
Total Approved Expenditures	$24,943,431	$12,174,572	$37,118,003

Some understanding of the type and magnitude of the work represented by these figures can be gained from the following summary of the principal items of work performed by the Counties and Suburban Commissions.

CONSTRUCTION ITEMS

1. Roads:	
New or rebuilt gravel and stone surfaces	558 miles
Low cost bituminous surfaces	167 "
High cost bituminous surfaces	198 "
Grades to standard cross-section	318 "
2. Bridges and culverts:	
Bridges (10′ span and over)—concrete, 77; steel-14; timber 6.	
TOTAL	97
Culverts (under 10′ span) concrete, 46; metal arch, 29.	
TOTAL	75
Pipe culverts installed	2,734

MAINTENANCE ITEMS

1. Surface maintenance and drainage:	
Roadside ditching	270 miles
Bituminous surface treatment	614 "
Dust laying with oil	801 "
Dust laying with calcium chloride	1,642 "
Resurfacing—Crushed gravel	492,166 cu. yds.
Crushed stone	53,209 " "
2. Winter control—Snow removed	9,125 miles
Snow fence erected	1,602 "
3. Weed and brush control—Spraying	6,299 "
Cutting	5,552 "
4. Bridges repaired	119
Culverts repaired	413

COUNTY SUBURBAN ROADS

(*Part VIII, The Highway Improvement Act*)

Thirty-five cities and separated towns in the province have joined their neighbouring counties to form suburban roads commissions. These commissions have assumed portions of the county road systems of special interest to the cities and separated towns. Their 1964 mileages, expenditures and government aid are shown below.

County	Suburban Road Commission	Mileage	Approved Expenditure	Government Subsidy
Brant	Brantford	61.5	$ 176,755.02	$ 91,300.36
Carleton	Eastview	3.8	9,554.21	5,022.81
	Ottawa	108.7	1,155,849.63	602,066.93
Elgin	St. Thomas	25.0	26,097.45	13,645.15
Essex	Riverside	4.0	42,845.21	21,561.34
	Windsor	49.0	538,433.94	305,974.56
Frontenac	Kingston	41.9	138,548.83	69,540.87
Grey	Owen Sound	33.5	57,711.65	28,864.82
Hastings	Belleville	16.2	62,697.39	33,193.55
Kent	Chatham	27.1	43,309.03	21,934.95
Lambton	Sarnia	25.5	263,070.73	133,940.41
Lanark	Smiths Falls	10.9	11,603.85	5,803.73
Leeds and Grenville	Brockville	18.4	44,462.12	22,430.37
	Gananoque	9.1	11,615.34	5,823.97
	Prescott	2.8	15,102.70	7,551.35
	Smiths Falls	5.2	14,544.13	7,861.17
Lincoln	St. Catharines	46.8	199,956.30	102,721.13
Middlesex	London	67.6	432,613.08	289,621.19
Northumberland and Durham	Trenton	12.7	14,782.31	7,503.75
Ontario	Oshawa	30.8	224,804.10	131,535.91
Oxford	Ingersoll	4.5	8,884.18	4,488.01
	Woodstock	9.4	13,350.33	6,685.87
Perth	St. Mary's	6.4	12,504.00	6,252.00
	Stratford	23.1	49,509.92	24,754.96
Peterborough	Peterborough	50.8	183,287.15	93,251.61
Simcoe	Barrie	18.2	37,922.01	18,985.81
Stormont, Dundas and Glengarry	Cornwall	61.0	131,625.44	68,458.31
Waterloo	Galt	33.9	56,245.73	28,312.15
	Kitchener	60.1	369,340.25	187,076.00
	Waterloo	23.0	160,099.97	82,256.13
Welland	Niagara Falls	27.8	212,785.71	110,908.40
	Welland	16.4	156,151.23	82,138.24
Wellington	Guelph	37.5	60,909.24	30,602.47
Wentworth	Hamilton	168.0	913,083.89	488,785.03
York	Toronto-York	193.9	2,020,340.33	1,028,616.64
Totals		1,334.5	$7,870,396.40	$4,169,469.95

INCORPORATED TOWNSHIPS

(Part IX, The Highway Improvement Act)

574 townships, 17 improvement districts and 42 Indian reserves received aid under this part of the Act in 1964. The expenditures made by these 633 road authorities showed an increase over 1963 expenditures of close to $2,000,000 with a corresponding increase of government subsidy of approximately $1,200,000.

A breakdown of the 1964 expenditures follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$20,214,845	$21,401,221	$41,616,066
Bridges and culverts	5,799,518	1,026,311	6,825,829
Winter control	.....	4,792,107	4,792,107
Total Approval Expenditures	$26,014,363	$27,219,639	$53,234,002

These expenditures provided for the following major items of work:

Construction Items

1. Roads:
   - New or rebuilt gravel and stone surfaces ..... 1,000 miles
   - Low cost bituminous surfaces ..... 245 "
   - High cost bituminous surfaces ..... 784 "
   - Graded to standard cross-section ..... 2,266 "
2. Bridges and culverts:
   - Bridges (10′ span and over)—concrete, 155; steel, 36; timber, 24.
     Total 215
   - Culverts (under 10′ span)—concrete, 86; metal arch, 263; timber, 81.
     Total 430
3. Pipe culverts installed 9,100

Maintenance Items

1. Surface and drainage:
   - Roadside ditching ..... 1,806 miles
   - Bituminous surface treatment ..... 569 "
   - Dust laying—with oil ..... 1,846 "
   - with calcium chloride ..... 10,502 "
   - Resurfacing—Crushed gravel ..... 2,763,928 cu. yds.
   - Crushed stone ..... 218,195 "
   - Pit-run gravel ..... 1,147,985 "
2. Winter control—Snow removed ..... 46,105 miles
   - Snow fence erected ..... 3,237 "
3. Weed and brush control—By spraying ..... 19,401 "
   - By cutting ..... 21,913 "
4. Bridges repaired ..... 734 "
   - Culverts repaired ..... 4,973 "

CITIES, TOWNS AND VILLAGES

(Part X, The Highway Improvement Act)

The 1964 subsidized expenditures made by 346 urban municipalities rose some $7.2 million above their 1963 expenditures, a percentage increase of approximately 16.4%. This represented the largest increase in expenditures made by the urban municipalities since aid was commenced in 1947.

A breakdown of the expenditures made by 32 cities, 7 separated towns, 150 towns and 157 villages follows:

	Construction	Maintenance	Total
Roads (winter control excepted)	$24,105,290	$18,384,761	$42,490,051
Bridges and culverts	2,713,325	485,685	3,199,010
Winter control	.....	5,976,297	5,976,297
Total Approved Expenditures	$26,818,615	$24,846,743	$51,665,358

A chronological summary of urban expenditures and provincial aid, and a table of street mileages by type of surface is included in the appendix.

DIRECT EXPENDITURES SECTION

P. D. Patterson, P.Eng., Direct Expenditures Engineer

DEVELOPMENT ROADS

(*Part XI, The Highway Improvement Act*)

During the fiscal year, $14,454,988.59 was spent on 168 development road designations covering 976.70 miles of roads under the jurisdiction of townships and counties. The standard of improvements carried out range from a road facility to carry thousands of vehicles per day to roads which will carry less than 100 vehicles per day.

35 projects with a total mileage of 133.9 were completed and the designations revoked. 35 new designations on 176.2 miles were made.

As the means to measure the financial requirements of desirable county road systems in the province and to administer direct assistance to desirable county road systems, the County Road Needs Study was initiated. During the fiscal year this study was advanced to the extent that its implementation will proceed approximately as scheduled.

The adjustments in subsidy to townships pursuant to the subsidy formula have resulted in fewer township development road designations since townships can handle the major portion of their road problems under normal subsidy arrangements without supplementary assistance.

Locations, mileages and expenditures on development roads are shown in the appendix.

ROADS IN TERRITORY WITHOUT MUNICIPAL ORGANIZATION

(*Part XII, The Highway Improvement Act*)

Under this part of the Act, aid is rendered to Statute Labour Board and groups of settlers toward the improvement and maintenance of roads and bridges. With the enactment of the Local Roads Boards Act, 1964, assistance to Local Roads Boards will also be provided under this part.

The amount of contribution to Statute Labour Boards was at least equivalent to the value of the statute labour. Under the Local Roads Boards Act, 1964, taxes are

levied upon the assessed value of the land for the purposes of the Local Roads Boards and road improvements in a local roads area benefit from a contribution of twice the amount of the local contribution. During the fiscal year, 33 Local Roads Boards were organized to the degree which will permit them to commence operation next year.

The distribution of aid by districts is listed in the following table:

SUMMARY OF UNINCORPORATED TOWNSHIPS EXPENDITURES IN THE FISCAL YEAR 1964-65

Municipal District	Value of Statute Labour on Other Work Performed	Direct Expenditure on Roads by Department	Total Value of Work Performed	Percentage of Aid by Department
10 Nipissing	$ 3,332.50	$ 7,132.26	$ 10,464.76	68
11 Huntsville and Parry Sound	101,266.87	347,914.33	449,181.20	77
13 Nipissing	51,348.21	114,938.84	166,287.05	69
14 Temiskaming and Cochrane South	46,339.63	74,334.41	120,674.04	62
16 Cochrane North	57,596.23	153,996.72	211,592.95	73
17 Sudbury	63,385.32	133,179.89	196,565.21	68
18 Algoma	44,313.04	113,756.91	158,069.95	72
19 Thunder Bay	60,798.62	165,860.78	226,659.40	73
20 Kenora and Rainy River	53,433.20	96,127.60	149,560.80	64
Totals	$481,813.62	$1,207,241.74	$1,689,055.36	71

SIDEWALK CONSTRUCTION 1964-65

(Under Part XIII, Section 100, The Highway Improvement Act, 1960)

Lochiel	Police Village of Glen Robertson and Dalkeith (County Roads 24 and 10)	$ 1,697.93
N. Walsingham Township	Hamlet of Langton (County Road No. 7)	1,386.72
Clarence Township	Police Village of Clarence Creek (County Road No. 8)	993.64
Alfred Township	Hamlet of Lefaivre (County Road No. 15A)	1,020.43
Cumberland Township	Police Village of Sarafield (County Road No. 1)	588.75
Tyendinaga Township	Hamlet of Shannonville (County Road No. 7)	805.50
Amabel Township	Hamlet of Sauble Beach (County Road No. 8)	1,801.86
North Gower Township	Police Village of North Gower (County Road No. 11)	415.94
North Plantagenet Township	Police Village of Curran (County Road No. 1)	450.00
Wilmot Township	Police Village of St. Agatha (County Road No. 6)	270.50
Winchester Township	Police Village of Morewood (County Roads No. 13 & 7)	1,054.65
Osgoode Township	Police Village of Metcalfe and Osgoode (County Road No. 11 and 5)	1,059.83
Thurlow Township	Hamlet of Point Anne (County Road No. 17)	1,037.71
Fitzroy Township	Police Village of Kinburn and Fitzroy Harbour (County Roads No. 28 and 23)	179.34
Russell Township	Police Village of Embrun and Russell (County Roads No. 3 and 6)	1,241.50
Loughborough Township	Hamlet of Sydenham (County Road No. 5A)	626.59
East Hawkesbury Township	Police Village of Ste. Anne de Prescott (County Road No. 18)	181.25
Total		$14,812.14

PLANS APPROVALS

B. R. Heavysege, P.Eng., Plans Approval Engineer

Plans approved during the year were as follows:

Development Roads— 44 plans	137 miles
By-law Construction—204 plans	342 miles
TOTAL—248 plans	479 miles

The above totals show an increase of 39 miles over last year's approvals.

As most of the by-law plans are now approved at the district level, unless a Head Office decision is required, most of our work in involved in examining and approving development road plans and contract documents.

Most of the pre-engineering and contract supervision on development roads is now carried out by consulting engineering firms acting for the municipalities, and there is a great deal of liaison required in order to get the work done to our standards and on schedule. This involves preliminary field reviews where grade and alignment are approved and pre-contract reviews where plans and documents are reviewed with all interested parties in attendance and finally official approval of plans and documents before the contracts are called.

There were twenty-six consulting firms on this work and, while there has been a steady improvement in the quality of their work, instruction and guidance in many cases has proven very time consuming. However, we now have a nucleus of competent consultants who can proceed with a job with a minimum of guidance.

DISTRICT No. 1 — CHATHAM

F. C. Brown, P.Eng., District Engineer

Construction

During 1964 further progress was made towards the completion of the Macdonald-Cartier Freeway. The east-bound lane was opened to traffic between the Tilbury East interchange and the Kent Centre interchange, a distance of 15 miles. Further progress was made in the elimination of grade crossings with the completion of underpasses at Kent County Road 9 (Scane side road) and Kent County Road 21 (Muirkirk side road).

In the Sarnia area further improvement of Highway 402 was made with the completion of the Indian Road underpass and the Modeland Road interchange. The Indian Road crossing will provide a major north-south route for the city of Sarnia. The Modeland Road interchange will provide improved traffic interchange facilities for Highway 402 and Highway 7 and for the future Highway 40A (Sarnia By-pass).

Work in the village of Grand Bend consisted of reconstruction of Highways 21 and 81 through the village and the provision of a much improved crossing over the Aux Sable River.

In Essex County Highway 39 through the village of Belle River was reconstructed providing a much improved surface and parking facilities. On Highway 18 the new bridge over Wigle Creek was completed.

Grading contracts for the two service areas on the Macdonald-Cartier Freeway at Tilbury were completed allowing the oil company lessees to proceed with the construction of the service areas and buildings.

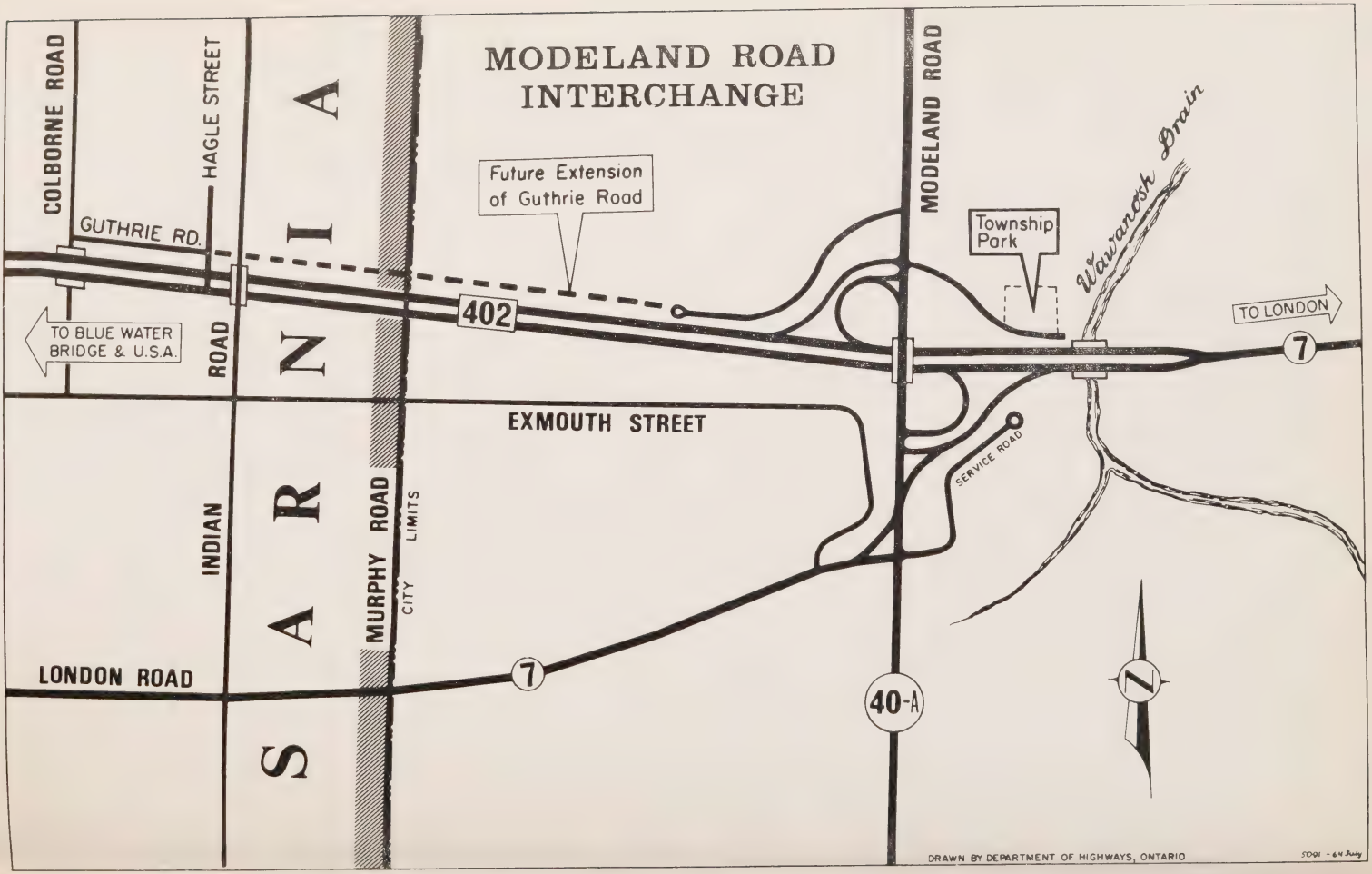
Maintenance

General maintenance operations were carried out in the district during 1964-65. Winter maintenance operations were greatly increased over last year. The amount of sand and salt spread on the highways in Chatham District was increased by 114% and 66% respectively due to weather more severe than usual. Also five mechanical sanders were added to the fleet bringing the total to fourteen.

Three hot mix patching contracts and two crushed gravel contracts for shouldering were carried out. A dense graded hot mix resurfacing contract was also carried out on Highway 78 between Wallaceburg and Dresden. The paving of Reece's Corners patrol yard and Wallaceburg patrol yard were completed.

The year 1964-65 was once again an extremely busy one for the electrical crew, who installed six new traffic signals, eleven flasher signals and seven sets of street lighting. Five sets of lights were also installed at various patrol yards for use during winter operations. This year the electrical crew were equipped with a new electrical line truck fitted with a boom, winch and auger. This truck has increased the efficiency of the crew in the construction and maintenance of all electrical installations.

A new patrol was formed at Kent Centre to take care of the maintenance of a section of the Macdonald-Cartier Freeway which will be completed to four lanes in 1965.


MODELAND ROAD INTERCHANGE
COLBORNE ROAD
HAGLE STREET
GUTHRIE RD.
TO BLUE WATER BRIDGE & U.S.A.
INDIAN ROAD
SARNIA
MURPHY ROAD
CITY LIMITS
LONDON ROAD
Future Extension of Guthrie Road
402
EXMOUTH STREET
MODELAND ROAD
Township Park
Wawanosh Drain
TO LONDON
7
SERVICE ROAD
40-A
N
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO

Five standard salt sheds were constructed by district forces. The interior and exterior of the main garage was painted by contract awarded by the Department of Public Works.

117 trees were relocated by the tree saver during the year. 714 dead and dangerous trees were removed by the district forestry crew on two projects and maintenance operations.

Automatic Signals at Railway Crossings

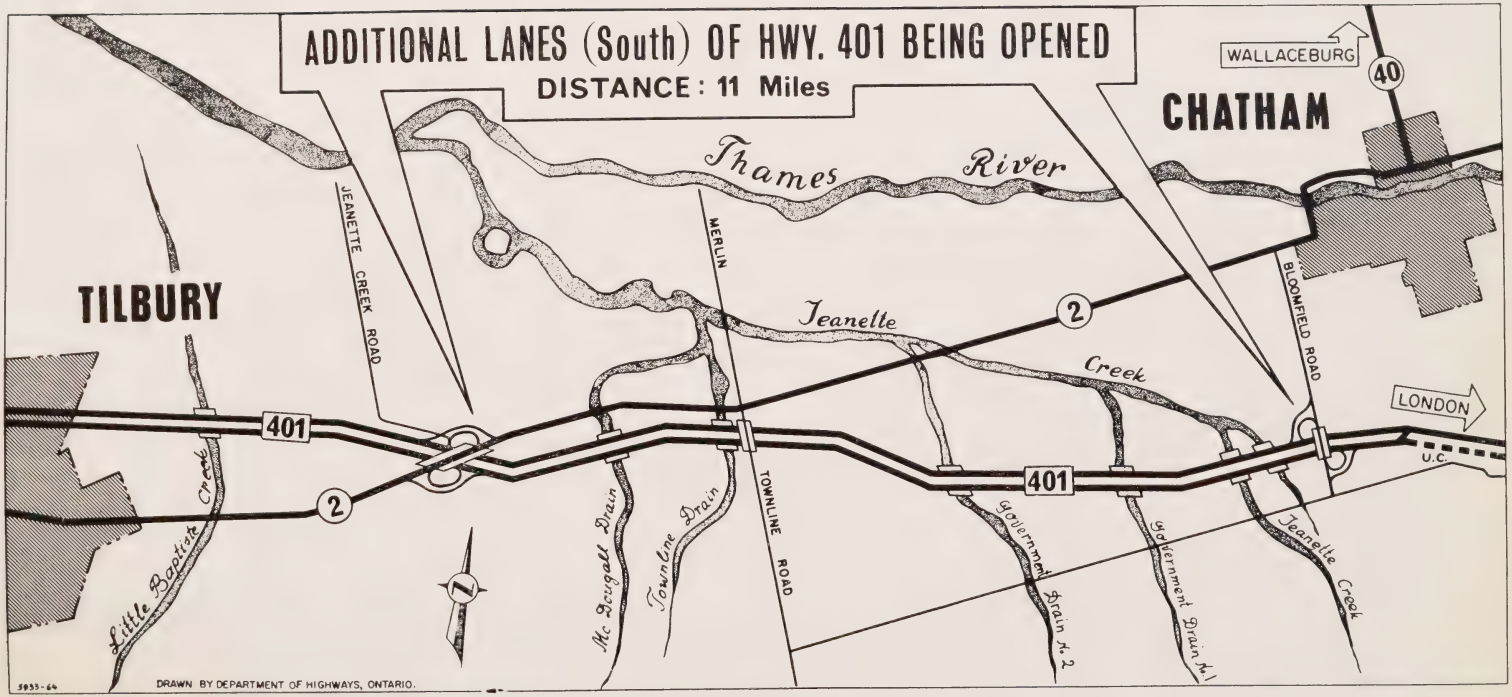
Hwy. No.	Railway	Location	Type
18	C. & O.	Lot 1, Concession 1, Township of Gosfield South, County of Essex	2 flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
2, 98	Intersection of Walker Road with Hwys. 2 and 98 near Windsor	0.43	1964	0.43	2,657.82
2	Bloomfield sideroad intersection	0.15	1964	0.15	589.96
7	Wawanosh drain, 2 mi. east of Sarnia, easterly 1.18 mi.	1.18	1963	1.18	7,173.84
18	Wigle Creek, 1.2 mi. west of Kingsville	0.28	1963	0.28	1,175.92
21	Town of Forest (culvert replacement)	0.10	1964	0.10	461.24
21, 81	Village of Grand Bend	1.13	1964	1.13	6,710.50
39	From intersection of Hwy. 39 and Hwy. 2 to village of Belle River	2.84	1964	2.84	9,853.33
40C	From Hwy. 40 to Hwy. 402	0.15	1964	0.15	172.03
M.C.F.	Underpass at Muirkirk County Road 7.4 mi. east of Hwy. 21	0.40	1964	0.40	1,073.81
M.C.F.	Scanes Road underpass, 2.2 mi. west of Hwy. 21	0.52	1964	0.52	1,521.91
402	Underpass at Indian Road (city of Sarnia)	0.28	1964	0.28	2,284.44
402	Hwys. 7 and 402, Modeland Road interchange	3.45	1964	3.45	14,411.41
	Totals	10.91		10.91	48.086.21

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed 1964–65
	Various	1,080


ADDITIONAL LANES (South) OF HWY. 401 BEING OPENED
DISTANCE: 11 Miles
WALLACEBURG
40
CHATHAM
Thames River
TILBURY
JEANETTE CREEK ROAD
MERLIN
Jeanette Creek
2
BLOOMFIELD ROAD
LONDON
401
401
2
U.C.
Little Baptiste Creek
McLaggan Drain
Townline Drain
TOWNLINE ROAD
Government Drain No. 2
Government Drain No. 1
Jeanette Creek
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO.
5033-64

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
7	From Jct. Hwys. 7 and 22 to Jct. Hwys. 7 and 21	2.7	2,712
40	From 2.3 mi. north of Sombra to 3.6 mi. south of Wallaceburg	2.8	2,839
78	Wallaceburg to Dresden	10.1	3,924
79	From Watford to Cairo	1.5	1,452
401	From Windsor to east Jct. Hwys. 401 and 2	1.2	1,226
	Totals	18.3	12,153

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
7	Wawanosh drain, 2 mi. east of Sarnia	1963	1964	Reinforced concrete, rigid frame
21	Aux Sable River in Grand Bend	1963	1964	Reinforced concrete, post tensioned
40	Clay Creek, 2.9 mi. north of Sombra	1964		Reinforced concrete, rigid frame
M.C.F.	Underpass at Muirkirk County Road, 7.4 mi. east of Hwy. 21	1964	1964	Reinforced concrete, structural steel beam
M.C.F.	At Highgate Road, County Road 20, 4.91 mi. east of Hwy. 21, interchange structure	1964		Reinforced concrete, steel beam
M.C.F.	At Hwy. 21 interchange, interchange structure	1964		Reinforced concrete, steel beam
M.C.F.	Underpass at Scane Road, 2.2 mi. west of Hwy. 21	1964	1964	Reinforced concrete, steel beam
402	Underpass at Indian Road (city of Sarnia)	1964	1964	Reinforced concrete, prestressed beam
402	At Modeland Road interchange, interchange structure	1964	1964	Reinforced concrete, prestressed beam

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Year Begun Work Begun	Opened to Traffic Miles Compl. 1964–65	Type of Structure Tons Placed 1964–65	Type of Structure Pave. Width
M.C.F.	Deceleration Lane at Bloomfield Road interchange	0.31	1964	0.31	148.29	0–12 Ft.
M.C.F.	Acceleration and Deceleration Lanes for Service Centre W-8, south of Macdonald-Cartier Freeway	0.31	1964	0.31	257.82	12–16 Ft.
M.C.F.	Acceleration and Deceleration Lanes for Service Centre W-7, north of Macdonald-Cartier Freeway	0.31	1964	0.31	257.82	12–16 Ft.
	Totals	0.93		0.93	663.93	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Sq. Yds. Placed 1964–65	Pave. Width
M.F.C.	From 8.93 mi. east Jct. Hwy. 2 (Tilbury), easterly to Kent Centre	7.20	1964	7.20	87,126	24 Ft.
M.C.F.	From 1.08 mi. east of Jct. Hwy. 2 (Tilbury), easterly 7.85 mi.	7.85	1963	7.85	108,951	24 Ft.
	Totals	15.05		15.05	196,077	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
2, 98	Hwys. 2 and 98 intersection of Walker Road	0.43	567
2, 3	Maidstone, Sandwich South Twp. Line to Windsor, and Oldcastle to Windsor, Hwy. 3	20.0	10,041
7	From Jct. Hwys. 7 and 22 to Jct. Hwys. 7 and 21	2.7	2,217
7	Wawanosh Drain, 2 mi. east of Sarnia, easterly 1.18 mi.	1.18	1,979
18	Wigle Creek 1.2 mi. west of Kingsville	0.28	453
21	Morpeth to Thamesville	14.0	6,900
21	Village of Grand Bend	1.13	723
39	From intersection of Hwy. 39 and Hwy. 2 westerly 2.84 mi. to Belle River	2.84	4,672
40	Wallaceburg to 5 mi. south	5	3,124
40	From 2.3 mi. north of Sombra to 3.6 mi. south of Wallaceburg	2.8	3,011
78	From Wallaceburg to Dresden	10.1	3,167
79	From Watford to Cairo	1.5	941
M.C.F.	Scanes Road underpass 2.2 mi. west of Hwy. 21	0.52	697
402	Hwys. 7 and 402 Modeland Road interchange	3.45	6,216
	Totals	65.93	44,708

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Tons Placed 1964–65
	Various throughout district	5,900

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
2	Hwys. 2 and 98 intersection of Walker Road with Hwys. 2 and 98	0.43	1964	.....	0.43
2	From intersection of Hwys. 2 and 98 to Windsor city south limits	2.42	1964	.....	30%
2	Bloomfield sideroad intersection	0.15	1964	.....	0.15
7	Wawanosh drain 2 mi. east of Sarnia, easterly 1.18	1.18	1963	0.50	0.68
21	Town of Forest (culvert replacement)	0.10	1964	.....	0.10
21, 81	Village of Grand Bend	1.13	1963	1.00	0.13
39	From intersection of Hwy. 39 and Hwy. 2 to the village of Belle River	2.84	1963	0.28	2.56

Grading and Culverts (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
40	Clay Creek bridge 2.9 mi. north of Sombra	0.75	1964	.....	28%
40A	Sarnia by-pass from Sarnia city limits at Indian Road easterly and northerly to Modeland Road interchange	4.61	1965	.....	10%
40C	From Hwy. 40 to Hwy. 402	0.15	1964	.....	0.15
98	From 1.20, 4.45 and 9.12 mi. west of Hwy. 98B	1.14	1964	..	27%
M.C.F.	Underpass at Muirkirk County Road 7.4 mi. east of Hwy. 21	0.40	1964	.....	0.40
M.C.F.	Interchange at Macdonald-Cartier Freeway and County Road 20 4.91 mi. east of Hwy. 21	1.19	1964	.....	61%
M.C.F.	Hwy. 21 interchange	0.52	1964	.....	22%
M.C.F.	Scanes Road underpass 2.2 mi. west of Hwy. 21	0.52	1964	.....	0.52
M.C.F.	Service Centre W-8 south of Macdonald-Cartier Freeway	0.31	1964	.....	0.31
M.C.F.	Service Centre W-7 north of Macdonald-Cartier Freeway	0.31	1964	.....	0.31
402	Underpass at Indian Road (city of Sarnia)	0.28	1964	.....	0.28
402	Hwys. 7 and 402 Modeland Road interchange	3.45	1964	.....	3.45
	Totals	21.88		1.78	9.47

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
2	Hwys. 2 and 98 intersection of Walker Road with Hwys. 2 and 98	0.43	1964	.....	0.43	13,771
2	From intersection of Hwys. 2 and 98 to Windsor city south limits	2.42	1964	.....	0.50	5,055
2	Bloomfield sideroad intersection	0.15	1964	.....	0.15	1,270
7	Wawanosh drain 2 mi. east of Sarnia easterly 1.18 mi.	1.18	1963	0.42	0.76	38,617
21	Town of Forest (culvert replacement)	0.10	1964	.....	0.10	3,240
21	Grand Bend south limits to Grand Bend north limits, Incl. Aux Sable River Br., Hwy. 81 from Jct. Hwy. 21 in Grand Bend southerly, Incl. Aux Sable Arch culvert	1.13	1963	1.00	0.13	24,822
39	From intersection of Hwy. 39 and Hwy. 2 westerly 2.84 mi. to Belle River	2.84	1963	0.28	2.56	21,353
40	Clay Creek bridge 2.9 mi. north of Sombra	0.75	1964	.....	.....	.....
40C	From Hwy. 40 to Hwy. 402	0.15	1964	.....	0.15	805
98	From 1.20, 4.45 and 9.12 mi. west of Hwy. 98B	1.14	1964	.....	.....	.....
M.C.F.	From 8.7 mi. west of Hwy. 76, westerly 9.18 mi. to Hwy. 21 south lanes	9.18	1964	.....	9.18	184,114

Granular Base on New Grading (Cont'd)

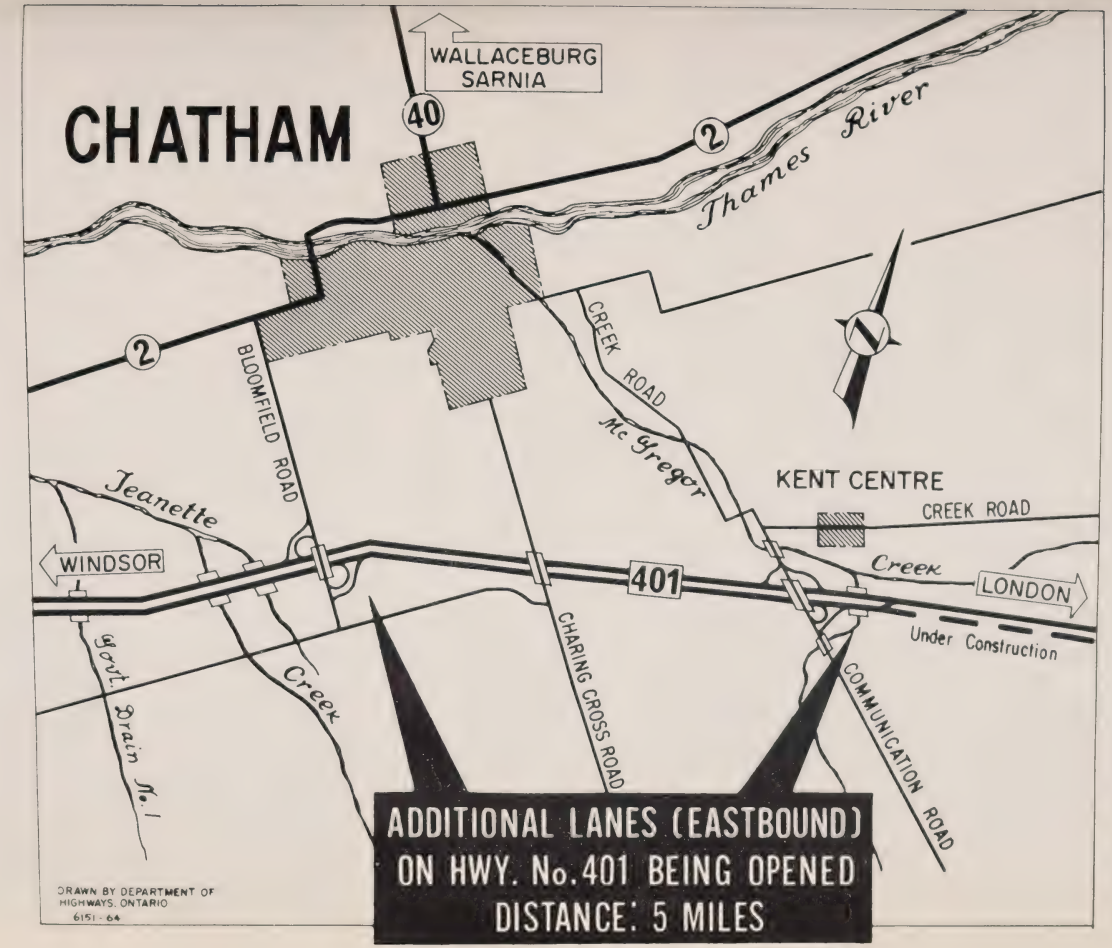
Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1965–65	Tons Placed 1964–65
M.C.F.	Underpass at Muirkirk County Road 7.4 mi. east of Hwy. 21	0.40	1964	.....	0.40	14,260
M.C.F.	Interchange at Macdonald-Cartier Freeway and County Rd. 20, 4.91 mi. east of Hwy. 21	1.19	1964	.....	1.00	64,104
M.C.F.	Hwy. 21 interchange	0.52	1964	.....	.....	.....
M.C.F.	From Hwy. 21 westerly (south lanes)	11.17	1964	.....	11.17	244,450
M.C.F.	Scanes Road underpass 2.2 mi. west of Hwy. 21	0.52	1964	.....	0.52	32,356
M.C.F.	From 8.93 mi. east of Jct. Hwy. 2 Tilbury, easterly 7.20 mi.	7.20	1964	.....	7.20	158,828
M.C.F.	Service Centre W-8, south of Macdonald-Cartier Freeway	0.31	1964	.....	0.31	17,304
M.C.F.	Service Centre W-7, north of Macdonald-Cartier Freeway	0.31	1964	.....	0.31	18,560
402	Underpass at Indian Road (city of Sarnia)	0.28	1964	.....	0.28	11,274
402	Hwys. 7 and 402 Modeland Road interchange	3.45	1964	.....	3.45	230,772
	Totals	44.82		1.70	38.60	1,084,955

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
2	Patrol Yard (Pike Creek)	Heated storage	1964	1965
3	Patrol Yard (Blenheim)	Salt shed	1964	1964
7	Patrol Yard (Warwick)	Salt shed	1964	1964
21	Patrol Yard (Oil City)	Salt shed	1964	1964
21	Patrol Yard (Oil City)	Heated storage	1964	1964

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Off-road parks maintained	8	.....	.....
Roads snowploughed and kept open, King's highways	20	.....	735
Roadside picnic places maintained	55	.....	.....
Routine maintenance, King's highways	20	.....	735
Salt for de-icing roads (raw)	.....	11,071	735
Salt in sand, stockpiled	.....	320	.....
Sand for winter maintenance	.....	9,988	735
Scale houses maintained	3	.....	.....
Seeding by department's forces (acres)	70	.....	.....
Shrubs received and planted this year	2,056	.....	.....
Signs erected or replaced	4,714	.....	.....
Snow fence erected, dismantled, stored	.....	.....	40
Snow hedges planted this year	.....	.....	.....
Traffic lights installed this year	6	.....	.....
Weed control (gals.)	683	.....	543
Zone painting on King's highways (gals.)	7,720	.....	994


CHATHAM
WALLACEBURG
SARNIA
40
2
Thames River
2
BLOOMFIELD ROAD
CREEK ROAD
Mc Gregor
KENT CENTRE
CREEK ROAD
Jeanette
WINDSOR
401
Creek
LONDON
Under Construction
Govt. Drain No. 1
Creek
CHARING CROSS ROAD
COMMUNICATION ROAD
ADDITIONAL LANES (EASTBOUND)
ON HWY. No. 401 BEING OPENED
DISTANCE: 5 MILES
DRAWN BY DEPARTMENT OF
HIGHWAYS, ONTARIO
6151-64

DISTRICT No. 2 — LONDON

H. C. Dernier, P.Eng., District Engineer

Construction

No unusual problems were encountered during the construction season of fiscal 1964-65.

No new techniques were used. Electronically controlled screeds on hot mix pavers were used for the second year. The results from the use of this equipment were slightly better than the previous year, probably due to greater experience with this type of equipment by the operators

The remaining section of the east-bound lanes of Highway 401 in this district were completed and opened to traffic. Paving was completed on interchanges at Highway 126, at Highway 401, Hamilton Road and Middlesex County Road 37. Grading and paving were completed at Service Centres W5 and W6. Bituminous hot mix pavement was laid on all new grades constructed in the current fiscal year, as detailed elsewhere in this report.

Resurfacing of Highway 401 was continued westerly to a point 1.5 miles west of the Dorchester Road interchange.

New bridges were opened to traffic on Highway 3, at Payne's Mills, and Highway 73 at Port Bruce.

Maintenance

Routine summer and winter maintenance was carried out as in previous years. Due to somewhat increased mileage, payment of overtime in cash, and principally a more severe winter, the cost of winter maintenance increased by approximately $150,000.00 as compared to the winter of 1963-64.

It developed that seeding on Highway 126, in which wood fibre cover was used, proved to be at least 75 per cent ineffective. It was, therefore, necessary to reseed and



New bridge over Catfish Creek at Port Bruce on Hwy. 73. photo 5388 — (London District)

straw mulch almost the entire area. A similar failure has occurred on Highway 401 (south lanes) west of Interchange 17, which was seeded by the same method in the ate summer and early fall of 1964.

Some experimental work was carried out during the winter of 1964-65 in cleaning and prime coating bridge handrails. A number of different types of primer were used. The results to date indicate little difference in the results obtained between the various makes of primer used.

No new patrol garages were erected in the London District during fiscal 1964-65.

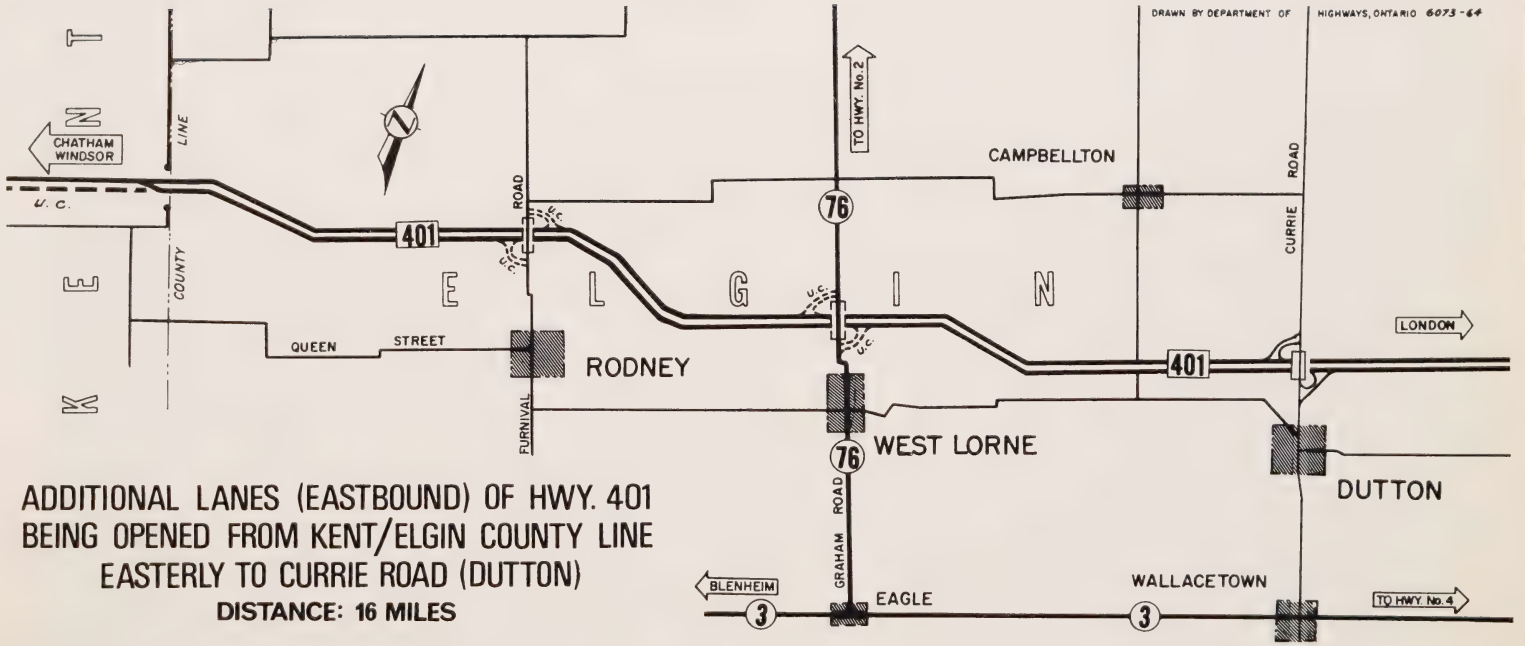
Eight salt sheds were erected. Five for the storage of salt and three for use as heated storage pending the erection of a proper patrol garage.

Automatic Signals at Railway Crossings

Hwy No.	Railway	Location	Type
19	C.N.R.	Tillsonburg	Alterations to automatic protection
59	C.N.R.	Near Tillsonburg	2 flash. lights, 1 bell
4	C.N.R.	Village of Lucan	Additional signals and modernization of control circuits

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
3	Talbotville to Shedden	6.44	1963	3.74	2.70	10,541
3	Interchange of Hwy. 3 and Elgin County Road 38, approximately 8.5 mi. west of Tillsonburg	0.20	1964	.....	0.20	869
4	0.6 mi. north of Calamity Corners to the Ilderton County Road	4.41	1963	.62	3.79	22,216
4	Exeter (Huron Street) southerly to Centralia	3.42	1964	.....	3.42	14,569
24	From 2.5 mi. north of Hwy. 3 (Simcoe) northerly 9.04 mi. to Scotland	9.04	1964	.....	9.04	14,526
126	From .53 mi. south of Hwy. 401 northerly 3.64 mi., 0.12 mi. north of Hamilton Road	3.64	1964	.....	3.64	1,419
401	From Hwy. 4 westerly for 12.07 mi.	12.07	1964	.....	12.07	418
401	From 12.3 mi. west of Hwy. 4 westerly to Hwy. 76, south lanes only.	11.70	1964	.....	11.70	389
401	From .03 mi. west of Hwy. 76 westerly 8.5 mi.	8.50	1964	.....	8.50	688
401	Service Centre W6—4.8 mi. east of Hwy. 76. South side of Hwy. 401	0.76	1964	.....	0.76	1,491
401	Service Centre W5—3.9 mi. east of Hwy. 76. North side of Hwy. 401	0.76	1964	.....	0.76	1,497
73	Catfish Creek (Port Bruce), 1.01 mi.	1.01	1964	.....	1.01	2,828
	Totals	61.95		4.36	57.59	71,451



ADDITIONAL LANES (EASTBOUND) OF HWY. 401
BEING OPENED FROM KENT/ELGIN COUNTY LINE
EASTERLY TO CURRIE ROAD (DUTTON)

DISTANCE: 16 MILES

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
81	Jct. Hwy. 22 to Jct. Hwy. 7	12.5	39,911	1,767

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
401	From 0.67 mi. west of Hwy. 19 westerly 7.21 mi.	3.32	19,378
	Part A		
401	From 1.65 mi. west of Putnam Road westerly 5.36 mi. and 0.9 mi. at Highbury Avenue interchange A.	3.66	12,365
	Part B		
	From 7.01 mi. west of Putnam Road to Hwy. 4, excluding 0.9 mi. at Highbury Avenue interchange B.	.....	95
2	Paris west limits to 0.2 mi. east of Jct. Hwy. 53	14.00	4,000
3	One mi. east of Iona, westerly to 1.7 mi. east of Jct. Hwy. 76	12.00	1,190
5	South Jct. Hwys. 5 and 24 to St. George	4.00	210
7	One mi. west of Ailsa Craig, westerly to east Jct. Hwys. 7 and 81	5.00	1,001
59	Woodstock to Norwich	18.50	4,000
	Totals	60.48	31,838

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
3	Dodd's Creek structure at Payne's Mills, approx. 1.7 mi. west of Hwy. 4	1963	1964	Barrel arch
73	Catfish Creek bridge at Port Bruce	1963	1964	Beam and slab

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Sq. Yds. Placed 1964–65	Pave. Width
401	From 12.3 mi. west of Hwy. 4 westerly to Hwy. 76, south lanes only	11.7	1964	11.7	149,434	24 Ft.
401	From 0.3 mi. west of Hwy. 76 westerly 8.5 mi.	8.5	1964	8.5	106,733	24 Ft.
	Totals	20.2		20.2	256,167	

Crushed Gravel and Stone by Contract

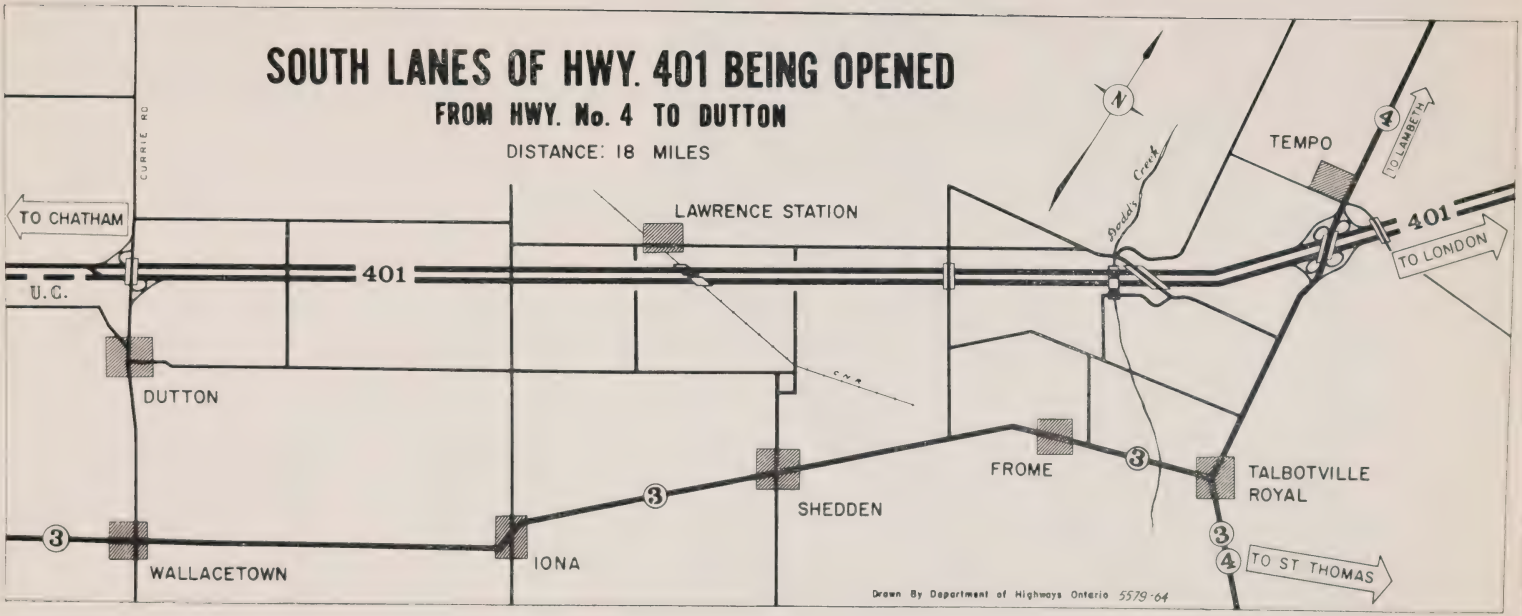
Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
3	Talbotville to Shedden	6.44	16,235
3	Interchange of Hwy. 3 and Elgin County Road 38, approximately 8.5 mi. west of Tillsonburg	0.20	1,946
4	0.6 mi. north of Calamity Corners to Ilderton County Road	2.69	54,220
4	Exeter, southerly to Centralia	1.44	23,408
24	From 2.4 mi. north of Hwy. 3, northerly 9.4 mi. to Scotland	6.65	92,516
126	From .53 mi. south of Hwy. 401 northerly 3.64 mi., 0.12 mi. north of Hamilton Road	.50	8,688
401	From 0.67 mi. west of Hwy. 19, westerly	5.05	20,483
401	Part "A" from 1.65 mi. west of Putnam Road, westerly 5.36 mi. including 0.9 mi. at Highbury Avenue interchange	3.13	14,437
	Part "B" from 7.01 mi. west of Putnam Road to Hwy. 4	11.80	3,678
401	From Hwy. 4 westerly to Southwold-Dunwich Townline, south lanes only	2.54	26,263
401	From Hwy. 76 westerly to the Elgin-Kent county line	8.50	100,369
401	From 12.3 mi. west of Hwy. 4 westerly to Hwy. 76, south lanes only	11.70	110,180
401	Service Centre W6—4.8 mi. east of Hwy. 76, south side of Hwy. 401	0.76	6,853
401	Service Centre W5—3.9 mi. east of Hwy. 76, north side of Hwy. 401	0.76	6,900
22	Townships of Lobo and Adelaide (shouldering only)	11.3	14,794
	Totals	73.46	500,970

Crushed Gravel and Stone on Roads by Department's Force

Hwy. No.	Location	Tons Placed 1964–65
Various	Shoulders—various locations	28,958

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
3	Talbotville to Shedden	6.44	1963	3.74	2.70
4	0.6 mi. north of Calamity Corners to Ilderton County Road	4.41	1963	2.91	1.50
4	Exeter southerly to Centralia	3.42	1963	2.53	.89
24	From 2.4 mi. north of Hwy. 3 northerly 9.4 mi. to Scotland	8.52	1963	3.66	4.86
73	Catfish Creek at Port Bruce	1.01	1963	.96	.05
401	From 12.3 mi. west of Hwy. 4 westerly to Hwy. 76, south lanes only	11.70	1964	.....	11.70
401	Service Centre W6—4.8 mi. east of Hwy. 76, south side of Hwy. 401	0.76	1964	.....	0.76
401	Service Centre W5—3.9 mi. east of Hwy. 76, north side of Hwy. 401	0.76	1964	.....	0.76
	Totals	37.02		13.80	23.22


SOUTH LANES OF HWY. 401 BEING OPENED
FROM HWY. No. 4 TO DUTTON
DISTANCE: 18 MILES
CURRIE RD
TO CHATHAM
U.C.
401
DUTTON
LAWRENCE STATION
C N R
Deadly Creek
TEMPO
TO LAMBETH
401
TO LONDON
FROME
SHEDDEN
TALBOTVILLE ROYAL
WALLACETOWN
IONA
TO ST THOMAS
Drawn By Department of Highways Ontario 5579-64

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Placed Tons 1964–65
3	Talbotville to Shedden	6.44	1963	4.96	1.48	34,530
4	0.6 mi. north of Calamity Corners to Ilderton County Road	4.41	1963	1.54	2.87	97,936
4	Exeter southerly to Centralia	3.42	1963	2.39	1.03	32,694
24	From 2.4 mi. north of Hwy. 3 northerly 9.4 mi. to Scotland	8.52	1963	2.81	5.71	64,445
73	Catfish Creek at Port Bruce	1.01	1963	.96	.05	3,556
401	From Hwy. 4 westerly to Southwold-Dunwich Townline	12.07	1963	10.74	1.33	1,583
401	From Hwy. 76 westerly to Elgin-Kent County Line	8.50	1964	.....	8.50	81,852
401	From 12.3 mi. west of Hwy. 4 westerly to Hwy. 76, south lanes only	11.70	1964	.....	11.70	124,669
	Totals	56.07		23.40	32.67	441,265

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
24	1.0 mi. south of north Jct. Hwys. 5 and 24	Salt shed	1964	1964
24	1.0 mi. south of north Jct. Hwys. 5 and 24	Heated storage	1964	1964
7	1.0 mi. west of Jct. Hwys. 7 and 4	Salt shed	1964	1965
7	1.0 mi. west of Jct. Hwys. 7 and 4	Heated storage	1964	1965
2	0.25 mi. west of Jct. Hwys. 80 and 2	Salt shed	1964	1965
2	1.0 mi. east of Thamesford	Salt shed	1964	1965
3	2.25 mi. west of Tillsonburg	Salt shed	1965	1965
3	2.25 mi. west of Tillsonburg	Heated storage	1965	1965

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Bridges painted (handrails)	12	.....	.....
Calcium dust layer on gravel roads	.....	79	.....
Off-road parks maintained	16	.....	.....
Roads snowploughed and kept open, King's highways	19	.....	742
Roadside picnic places maintained	88	.....	.....
Routine maintenance, King's highways	19	.....	742
Salt for de-icing roads (raw)	.....	24,209	.....
Salt in sand, stockpiled	.....	2,212	.....
Sand for winter maintenance	.....	68,502	.....
Scale houses maintained	2	.....	.....
Seeding by department's forces (acres)	203	.....	.....
Shrubs received and planted this year	9,305	.....	.....
Signs erected or replaced	4,962	.....	.....
Snow fence erected, dismantled, stored	.....	.....	119.0
Snow hedges planted this year	.....	.....	2.0
Weed control (gals).	1,613	.....	1,524
Zone painting on King's highways (gals).	8,761	.....	989

DISTRICT No. 3 — STRATFORD

J. G. Tillcock, P.Eng., District Engineer

Construction

The fiscal year 1964-65 saw the completion of four carry-over contracts and six new contracts. Work commenced on seven contracts which will be carried over and completed during the 1965 construction season.

Hot mix paving was completed on Highway 9 from Mildmay to Walkerton for 6.44 miles which included grading, drainage, granular base and hot mix paving at the junction of Highways 4 and 9.



Reconstructed Hwy. 9 — 2 miles north of Mildmay. photo 5356 — (Stratford District)

Grading, drainage, granular base and structures was completed on Highway 6 from Fergus northerly for 5.44 miles. A narrow bowstring structure was replaced along with much improved alignment and grade.

Grading, drainage, granular base and hot mix paving was completed on Highway 136 from the intersection of Highways 24 and 136 to the north limits of Alton for 3.05 miles. This work included extensive improvement to the storm sewer system as well as pavement widening in the village of Alton.

Grading, drainage, granular base and hot mix paving was completed in the village of Lucknow on Highway 86 which resulted in the elimination of an open millrace along the highway as well as extensive widening.

Grading, drainage and granular base was completed on Highway 86 from Elmira westerly for 3.18 miles which improved the general grade and eliminated several sharp curves.

Grading, drainage, granular base, hot mix paving including soils cement stabilization was completed on Highway 19 from Kintore north limits to Uniondale for 5.3 miles.

Grading, drainage, granular base and hot mix paving was completed at the junction of Highway 24 and County Road 69, three miles north of Eramosa on Highway 24, resulting in great visibility improvement at the intersection.

Intersection improvement was carried out at Whalen's Corners, 3.6 miles south of Woodham on Highway 23. This work included grading, drainage, granular base and hot mix paving.

Hot mix paving, along with curb and gutter work, was completed on Highway 6 from Fergus northerly for 5.44 miles.

Resurfacing was completed on Highway 19 from Milverton to Tralee for 8.99 miles along with hot mix patching at various locations on Highway 86 in the vicinity of Dorking, Tralee and Molesworth.

The work of grading, drainage, granular base and hot mix paving commenced on Highway 8 from Stratford west limits to Seebachs Hill. This work includes an extensive storm sewer system as well as pavement widening in the village of Sebringville. This contract will be completed in the 1965 construction season.

Work was started on a grading, drainage and granular base contract on Highway 97, Plattsville easterly for 6.09 miles and will be completed during the 1965 construction season.

Work of grading, drainage and granular base commenced 1.1 miles north of the Maitland River (at Goderich) northerly for 4.74 miles on Highway 21 and will be completed during the 1965 construction season.

Work was started on grading, drainage, granular base, hot mix paving and structure 1.0 mile south of Mitchell south limits to Mitchell north limits. This work includes a C.N.R. overpass structure along with extensive storm sewer work and street widening in the town of Mitchell.

Work commenced on the Little Maitland River bridge, 3.0 miles south of Palmerston on Highway 23. This work includes grading, drainage, granular base and paving and will be completed during the 1965 construction season.

The work of grading, drainage, granular base and four structures was completed with the exception of trimming 3.2 miles west of Elmira westerly for 2.4 miles. This work resulted in the replacing of one large and three small narrow structures as well as extensive grade and alignment improvement.

Work commenced on the Beaverdale Road and Highway 24 in the town of Hespeler. This work includes grading, drainage, granular base and hot mix paving and will be completed during the 1965 construction season.

Maintenance

Routine maintenance was carried out on 604 miles of King's highways. Seven bridges were painted under a bridge-painting contract. Major repairs were carried out by department forces on four bridges. This work included restoring deteriorated concrete and waterproofing decks. Gabions were installed at fifteen different locations on Highway 21 for erosion control. Automatic signals were installed at six railway crossings. Twenty-seven miles of gravel road were treated with prime dust layer. Surface treatment was carried out on eleven and a half miles of Highway 4 from Blyth to Wingham.

40,248 tons of crushed gravel were used on gravel roads and for shoulder maintenance. New additions were built to the patrol buildings at Exeter and Listowel, personnel buildings were constructed at Milverton, New Hamburg and Wroxeter, and a new stockroom was built at the Stratford District garage.

204 condemned trees were removed by contract on Highways 19 and 59 and 906 removed by department forces. Weed spraying operations were carried out on 486 miles of road. Zone painting was carried out on 607 miles of paved roads. 255 acres were seeded by department forces. 3,270 signs were erected or replaced. 147 picnic sites were maintained. Due to the severity of the winter, 14,442 tons of rock salt and 72,396 tons of sand were used.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
19	C.P.R.	Uniondale	flash. lights, bell
97	C.N.R.	Bright	flash. lights, bell
85	C.N.R.	South of St. Jacobs, mi. 5.83	flash. lights, bell
85	C.N.R.	South of St. Jacobs, mi. 6.84	flash. lights, bell
87	C.P.R.	South of Harriston	flash. lights, bell
24	G.R.R.	Town of Hespeler	flash. lights, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
4, 9	Mildmay to Walkerton, including D.H.O. patrol yard at Walkerton	6.44	1963	4.00	2.44	8,845
86	Village of Lucknow	0.11	1963	.....	0.11	28
24	Jct. Hwy. 24 and County Road 69, 3 mi. north of Eramosa	0.41	1964	.....	0.41	1,170
136	From intersection of Hwy. 24 northerly to Alton village	3.05	1963	.....	3.05	5,665
23	Whalen's Corners, 3.6 mi. south of Woodham	0.06	1964	.....	0.06	137
8	From Stratford west limits, westerly to Seebach's Hill	4.91	1964	.....	.....	7,940
19	Kintore north limits, northerly to Uniondale	5.30	1964	.....	5.30	9,250
19, 86	Milverton to Tralee (resurfacing) and vicinity of Dorking, Tralee, Molesworth (hot mix patching)	8.99	1964	.....	8.99	29,930
6	From Fergus northerly 5.44 mi.	5.44	1964	.....	5.44	20,905
23	From 1 mi. south of Mitchell town limits to Mitchell north limits, including C.N.R. overhead bridge	2.92	1964	.....	.....	3,076
	Totals	37.63		4.00	25.80	86,946



Bridge construction on Hwy. 86, 3 miles west of Elmira. photo 5351 — (Stratford District)

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
25	Hwy. 24 southerly towards Acton	5.5	15,090	400.60
86	Hwy. 7, 5 mi. east of Elmira	8.0	.....	.....
86	East of Wallenstein, westerly	2.3	34,256	756.10
97	Plattsville, easterly	6.5	20,684	521.10
136	Alton to Orangeville	5.0	14,002	327.80
	Totals	27.30	84,032	2,005.60

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
4	Blyth to Wingham	11.50	34,338	1,568.58

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
6	Irvine Creek bridge, 3.50 mi. north of Fergus	1963	1964	Reinforced concrete and structural steel
86	Conestogo River bridge, 4.70 mi. west of Elmira	1963	1964	Reinforced concrete and prestressed beams
86	Kirkland Creek bridge 1, 4.90 mi. west of Elmira	1963	1964	Reinforced concrete
86	Kirkland Creek bridge 2, 5.10 mi. west of Elmira	1963	1964	Reinforced concrete
86	Kirkland Creek bridge 3, 5.20 mi. west of Elmira	1963	1964	Reinforced concrete
23	Little Maitland River bridge, 3.0 mi. south of Palmerston	1964	1964	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
4, 9	Mildmay to Walkerton and D.H.O. patrol yard at Walkerton	4.00	9,598
8	From Stratford west limits, westerly to Seebach's Hill	2.50	3,050
19, 86	Milverton to Tralee (resurfacing), vicinity of Dorking, Tralee, Molesworth (hot mix patching)	8.99	27,360
6	From Fergus northerly 5.44 mi.	5.44	16,613
19	From Kintore north limits, northerly to Uniondale	5.30	14,730
	Totals	26.23	71,351

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
	Pavement Patching		
86	Jct. Hwys. 7 and 86 to Cox Creek	8.01	2,624
86	Waterloo-Wellington line to 5.27 mi. east of Dorking	3.75	1,113
	Various locations — for pavement patching	.....	5,434
	Shoulder Operations		
4	Exeter to Hensall	5.0	2,637
8	Clinton to Goderich	11.0	1,646
21	Bayfield to St. Joseph	10.0	2,243
24	Guelph to Erin	19.0	2,822
83	Brewster to Farquhar	19.0	5,942
85	Waterloo to Elmira	7.5	3,818
86	Tralee to Waterloo-Wellington line	14.11	1,791
87	Gorrie to Bluevale	7.0	1,971
	Various locations — shoulders	.....	8,207
	Totals	104.37	40,248

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65
86	Village of Lucknow	0.11	1963	0.11
24	Jct. Hwy. 24 and County Road 69, 3 mi. north of Eramosa	0.47	1964	0.47
136	From intersection of Hwy. 24 northerly to Alton village	3.05	1963	3.05
23	Whalen's Corners, 3.6 mi. south of Woodham	0.06	1964	0.06
6	From Fergus northerly 5.41 mi., including Irvine Creek bridge, 3.5 mi. north of Fergus	5.41	1963	5.41
86	West limit of Elmira, westerly	3.18	1963	3.18
8	From Stratford west limits westerly to Seebach's Hill	4.91	1963	4.91
21	1.1 mi. north of Maitland River, northerly 4.7 mi. (culverts 100 per cent complete)	4.74	1964	.....
19	Kintore north limits, northerly to Uniondale	5.30	1964	5.30
23	From 1 mi. south of Mitchell town limits to Mitchell north limits, including C.N.R. overhead bridge	2.92	1964	2.00
23	Little Maitland River, 3 mi. south of Palmerston	0.29	1964	0.29
86	3.2 mi. west of Elmira, westerly 2.4 mi., including Conestogo River bridge and three Kirkland Creek bridges	2.40	1964	2.40
97	From Plattsville easterly (culverts 100 per cent complete)	6.09	1964	.....
	Totals	38.93		27.18

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
86	Village of Lucknow	0.11	1964	0.11	250
24	Jct. Hwy. 24 and County Road 69, 3 mi. north of Eramosa	0.41	1964	0.41	3,720
136	From intersection of Hwy. 24 northerly to Alton village	3.05	1963	3.05	83,150
23	Whalen's Corners, 3.6 mi. south of Woodham	0.06	1964	0.06	610
6	From Fergus northerly 5.41 mi., including Irvine Creek bridge, 3.5 mi. north of Fergus	5.41	1963	5.41	254,550
86	West limits of Elmira, westerly	3.18	1963	3.18	151,120
8	From Stratford west limits westerly to Seebach's Hill	4.91	1964	4.91	217,850
19	Kintore north limits, northerly to Uniondale	5.30	1964	5.30	215,000
86	3.2 mi. west of Elmira westerly 2.4 mi., including Conestogo River bridge and 3 Kirkland Creek bridges	2.40	1964	2.40	120,879
23	From 1 mi. south of Mitchell town limits to Mitchell north limits, including C.N.R. overhead bridge	2.92	1964	1.90	65,108
23	Little Maitland River, 3 mi. south of Palmerston	0.29	1964	0.29	15,755
	Totals	28.04		27.02	1,127,992

New Buildings

Hwy. No.	Location	Type	Year Begun	Year Compl.
4	0.25 mi. north of town of Exeter	Personnel, tool room	1964	1964
23	Town of Listowel	Personnel, tool room	1964	1965
19	0.1 mi. south of the village of Milverton	Office	1964	1965
7, 8	New Hamburg	Office	1964	1965
87	Village of Wroxeter	Office	1964	1965
8	City of Stratford, district yard	Stockroom	1964	1964

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Bridges painted	7	.....	.....
Calcium dust layer on gravel roads	.....	100	27
Development roads built	4	.....	30
Off-road parks maintained	32	.....	.....
Roads snowploughed and kept open, King's highways	18	.....	604
Roadside picnic places maintained	147	.....	.....
Routine maintenance, King's highways	18	.....	604
Salt for de-icing roads (raw)	.....	14,442	.....
Salt in sand, stockpiled	.....	2,192	.....
Sand for winter maintenance	.....	72,396	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (acres)	255	.....	.....
Signs erected or replaced	3,270	.....	.....
Snow fence erected, dismantled, stored	.....	.....	169
Traffic lights installed this year	1	.....	.....
Weed control	.....	925	486
Zone painting on King's highways, including 30 mi. of Conn. Links	.....	.....	607

DISTRICT No. 4 — HAMILTON

H. Greenland, P.Eng., District Engineer

Construction

In Hamilton grading on four-lane Highway 403 was completed from Longwood Road to Aberdeen interchange and a contract for granular base and paving was started. Nearby on Highway 6 reconstruction to four lanes from Clappison Corners south to Highway 403 was also commenced. Grade separations were completed on Highway 5 at Tansley and on Highway 7 at Pleasant. New structures were completed on Highway 54, three miles west of Caledonia and at Niagara Street interchange on the Q.E.W. in St. Catharines. Service roads adjacent to the Q.E.W. between Cushman Road and Eastchester and at Vineland were completed.

In Brantford, grading on two sections of Highway 403 was completed and two miles of adjacent work started.

Widening to six lanes on the Q.E.W. from Highway 25 to the Freeman interchange was begun while resurfacing from Freeman to the Burlington Bay Skyway was completed.

Reconstruction of Highway 8 from St. David's southerly was started. Old Highway 8 from St. David's to Niagara Stone Road was resurfaced and reverted to Niagara Township.

Widening of Highway 20 from Drummond Road to the west city limits was begun under connecting link agreement in Niagara Falls.

A contract for the partial excavation at the Carlton Street tunnel site at the Welland Canal in St. Catharines was completed. This work provided valuable soils information required for the subsequent design of the tunnel.

Resurfacing was completed on Highway 3 from Jarvis to Nelles Corners. In the same vicinity a new structure and approaches was completed at McLennan's Creek on Highway 3.

Grading on Highway 52 was commenced from Kirkwall to Highway 97.

Maintenance

Two sections of structural steel, 11 bays and six bays, of the Burlington Bay Skyway were painted by two contractors during the summer. Bridge repairs and handrail painting was carried out throughout the district.

The district completed the park sites at the two Highway 401 service centres and put the parks into operation in the middle of the summer. Pumps were installed to two existing wells.

There was a large increase in the number of traffic signals installed by district forces over previous years. Eight new signals were installed and three existing signals were rebuilt.

Three patching contracts laid 18,100 tons of hot mix asphalt to correct surface breakup due to the frost action.

Grading and paving was carried out at three patrol yards—Morriston, Peter's Corners and Homer. Site plans were prepared for new patrol yards on Highway 20 east of Elfrida, Highway 3 east of Wainfleet, and Highway 56 north of Highway 3; additional property was purchased to increase the existing patrol yard on Highway 20, six miles east of Bismark.

Landscaping was continued throughout the district along the King's highways with the planting of 15,602 shrubs and the seeding of 121 acres. Weed spraying was carried out over 210 miles of highway.

On the sign maintenance program our sign shop erected 3,347 permanent signs and 1,125 signs for contracts. These permanent signs include 27 overhead extrusion signs which involve specialized equipment and experienced men to erect.

Approximately 11,400 gallons of zone paint was applied which included the overlay method and pre-mix method. Overlay method appeared the better of the two.

Winter maintenance was carried out in a similar manner as in previous winters over 793 miles of King's highways using 7,785 tons of salt (sodium chloride) as raw chemical and 92,200 tons of salted sand. Nine winter sanding contracts were in force applying the salt and the sand to the highways with the department carrying out the snow removal.



Excavation of Welland Canal bed for proposed Carlton Street traffic tunnel — St. Catharines. photo 6355 — (Hamilton District)

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Overpass Built
		The following Automatic Signals were *eliminated* by Overhead Structure construction:	
5	C.N.R.	"Tansley" Lot 5, Con. 1, N.D.S., Township of Nelson (now town of Burlington)	1964
7	C.N.R.	"Pleasant" Lot 10 and 11, Con. IV, Township of Chingacousy	1964
25	C.N.R.	Lot 17, Brant's Block "Burlington"	1964
25	C.N.R.	Lots 15 and 16, Con. II S.D.S., north of Jct. Hwy. 25 and Q.E.W.	1964

Bituminous Hot Mix Pavement

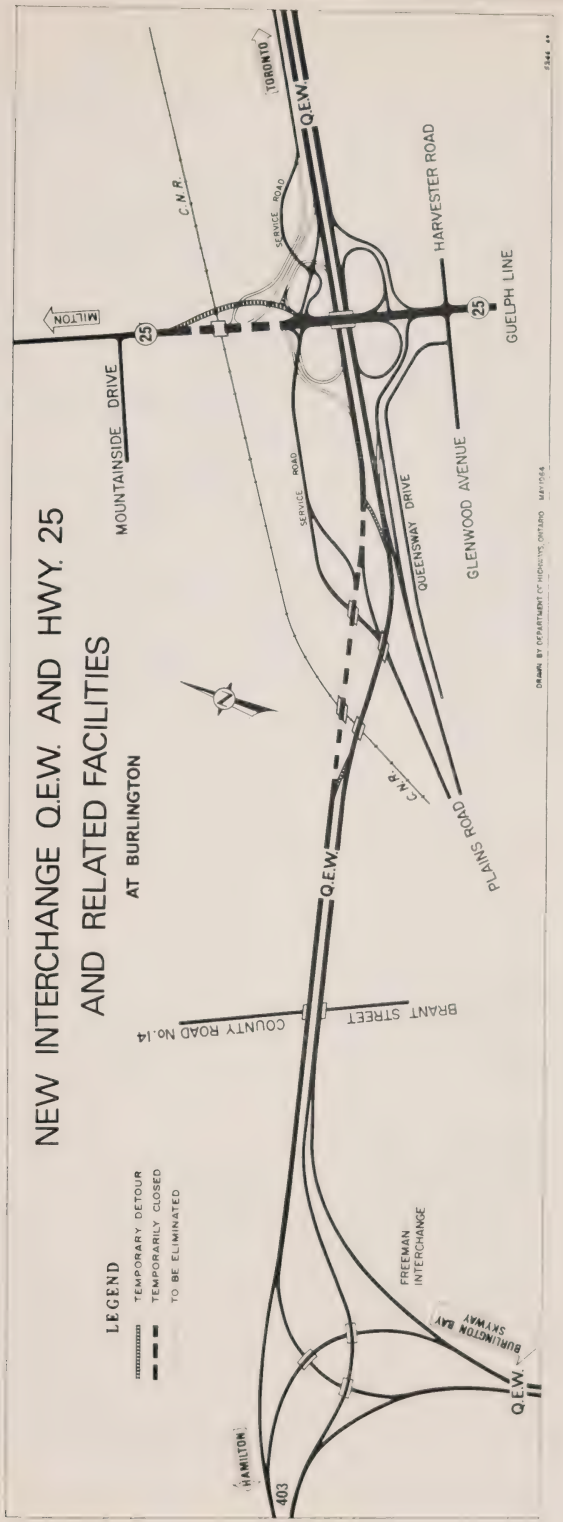
Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
3	McLennan's or Stoney Creek bridge, 6 mi. east of Jarvis	0.34	1964	.....	0.34	1,114
5	Level crossing 2.5 mi. west of east Jct. Hwys. 5 and 25	0.76	1963	0.12	0.64	6,751
5, 8, 52	Peter's Corners patrol yard	.....	1964	.....	.....	1,269
6	Clappison Corners, southerly 1.40 mi.	1.26	1964	.....	1.26	14,627
6, 401	Morriston patrol yard	.....	1964	.....	.....	1,970
7	C.N.R. overhead, 2.7 mi. west of Hwy. 10	0.93	1964	.....	0.93	5,245
8	Niagara Stone Road to St. David's Road interchange	4.12	1964	.....	4.12	4,952
8 Q.E.W.	Homer patrol yard	.....	1964	.....	.....	1,564
25, Old Q.E.W.	C.N.R. overhead, westerly to Freeman cut-off	0.53	1964	.....	0.53	1,581
57, 20 3A	Channelization at Hwys. 57 and 20, Bismark and Hwys. 57 and 3A, Beckett's bridge	1.14	1963	.....	1.14	5,790
403	King-Main interchange, Hamilton	1.01	1962	0.20	0.91	3,998
403	Park Road to North Park Street, Brantford	1.33	1963	.....	1.33	5,522
403	North Park Street westerly 2.31 mi.	1.47	1964	.....	1.47	3,718
406	St. David's Road to Westchester Ave., St. Catharines	3.60	1963	2.10	1.50	4,806
Q.E.W.	Niagara Street interchange, St. Catharines	1.43	1963	0.71	0.72	7,935
Q.E.W.	Q.E.W. and Service Roads, Garden City Skyway	2.28	1963	0.76	1.52	6,425
Q.E.W.	North and South Service Roads, Vineland to Jordan Station	2.62	1964	.....	2.62	11,172
Q.E.W.	Hwy. 25 interchange, westerly to Freeman interchange, Burlington	4.99	1964	.....	4.99	29,073
Q.E.W.	Hwy. 20 underpass, 3.09 mi. east of Niagara Falls west limits	0.17	1964	.....	0.17	65
Q.E.W.	St. David's Road interchange revision	0.37	1964	.....	0.37	1,577
Q.E.W.	Freeman interchange to north end Skyway bridge	2.16	1964	.....	2.16	12,137
	Totals	30.51		3.89	26.72	131,291

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
2	Brantford to Hamilton	1.40	1,875
3	Nelles Corners to Fort Erie	7.10	7,204
3A	Welland to Chambers Corners	1.27	1,245
3C	Ridgeway to Fort Erie	.53	504
5	Palermo to Brant, Wentworth line	1.24	1,300
6	Jct. Hwys. 6 and 54, Caledonia to Port Dover	.96	952
6	Clappison's Corners to Guelph	1.07	1,073
7	Guelph to Georgetown	1.08	1,020
8	St. Catharine's to Winona	.77	792
20	Black Horse Corners to Fonthill	.77	792
52	Jct. Hwy. 2 to Jct. Hwy. 5	.60	600
54	Caledonia to Jct. Hwy. 2	.62	510
56	Binbrook to Elfrida	.55	489
58	Thorold to Welland	.80	806
99	Dundas to Jct. Hwy. 52	.23	212
Q.E.W.	Freeman interchange to north end Burlington Skyway	2.16	12,137
	Totals	21.15	31,511

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
2	Mausoleum Curve, pedestrian underpass	1964	1964	Concrete rigid frame
3	McLennan's Creek or Stoney Creek bridge	1964	1964	Continuous reinf. concrete girder
5	Tansley, C.N.R. overpass	1963	1964	Continuous concrete girder
6	C.P.R. overpass	1964	1964	Continuous steel girder
6	C.P.R. overpass (north half only)	1964	1964	Continuous steel girder
7	"Pleasant" C.N.R. overpass	1964	1964	Continuous conc. girder
25	Plains Road C.N.R. overpass	1964	1964	Continuous steel girder
25	C.N.R. overpass	1964	1964	Continuous steel girder
403	TH & B Railway overhead	1963	.....	Continuous conc. girder
403	C.N.R. overhead	1963	.....	Concrete steel girder
403	Park Road underpass	1963	.....	Continuous conc. girder
403	West Street underpass	1963	.....	Continuous conc. girder
403	North Park Street underpass	1963	.....	Continuous conc. girder
403	Underpass at Ramp "D"	1963	.....	Continuous steel girder
403	Underpass at Aberdeen Avenue	1963	.....	Continuous steel girder
403	Bridge at Ramp "L" Service Road over drainage channel	1963	1964	Concrete slab
406	Townline Road (St. David's Road)	1963	.....	Concrete steel girder
406	Westchester Avenue Underpass	1963	.....	Continuous steel girder
406	Glendale Avenue overpass	1963	.....	Continuous steel girder
406	Chestnut Avenue	1964	.....	Prestressed slab
Q.E.W.	Niagara Street Underpass	1963	1964	Continuous conc. girder
Q.E.W.	Twenty Mile Creek	1964	1964	Continuous steel girder
Q.E.W.	Brant Street overpass	1964	1964	Concrete slab
Q.E.W.	Service Road	1964	1964	Concrete rigid frame
8	St. Lawrence Seaway Authority underpass	1964	1964	Reinforced concrete slab
	Bridges omitted from Report submitted 1964:			
403	C.N.R. subway, Chedoke Bridge 8	1963	1963	Continuous steel girder
403	Underpass at Ramp "M", Chedoke Bridge 4	1963	1963	Continuous steel girder


NEW INTERCHANGE Q.E.W. AND HWY. 25
AND RELATED FACILITIES
AT BURLINGTON
LEGEND
TEMPORARY DETOUR
TEMPORARILY CLOSED
TO BE ELIMINATED
MILTON
TORONTO
Q.E.W.
C.N.R.
SERVICE ROAD
MOUNTAINSIDE DRIVE
HARVESTER ROAD
GUELPH LINE
QUEENSWAY DRIVE
GLENWOOD AVENUE
PLAINS ROAD
BRANT STREET
COUNTY ROAD No. 14
FREEMAN INTERCHANGE
BURLINGTON BAY SKYWAY
HAMILTON
403
25

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65	Pave Width
Q.E.W.	Niagara Street interchange, St. St. Catharines	1.43	1963	1.38	10,615	24 Ft. and Var.

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
5	Level crossing 2.5 mi. west of east Jct. Hwy. 5 and 25	0.76	2,586
6	Clappison Corners, southerly 1.40 mi.	1.26	3,433
8	Niagara Stone Road to St. David's Road interchange	4.12	4,397
25	C.N.R. overhead, westerly to Freeman interchange	0.53	10,827
Old Q.E.W. 57, 20 3A	Channelization at Hwys. 20 and 57 (Bismark), and 57 and 3A Beckett's Bridge	1.14	2,455
403	Longwood Road to Aberdeen Avenue interchange in Hamilton	1.88	101,379
403	Park Road to North Park Street in Brantford	1.33	2,783
403	North Park Street, westerly 2.31 mi. to Hwy. 2	2.31	1,992
406	St. David's Road to Westchester Avenue in St. Catharines	3.60	909
Q.E.W.	North and South Service Roads, Vineland to Jordan Station	2.62	5,063
Q.E.W.	Niagara Street interchange to St. Catharines, contract completed	1.43	2,244
Q.E.W.	Q.E.W. and Service Roads, Garden City Skyway to St. Catharines	1.52	3,494
Q.E.W.	Q.E.W. and Hwy. 25 interchange to Freeman interchange	6.24	5,815
Q.E.W.	St. David's Road interchange revision	0.37	1,395
Q.E.W.	Freeman interchange to North End Skyway bridge	2.16	6,199
	Totals	31.27	154,971

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
2	Bronte to Brantford	28.77	1,238
3	Simcoe to Fort Erie	83.27	5,369
3A	Chambers Corners to Welland	9.38	356
3C	Ridgeway to Fort Erie	6.79	229
5	Brant-Wentworth line to Palermo	27.42	294
6	Port Dover to Guelph	55.85	2,256
7	Guelph to Jct. Hwy. 10	30.78	675
8	Galt to Niagara Falls	57.80	1,635
8A	Jct. Hwy. 8 to Queenston	2.77	100
20	Black Horse Corners to Jct. Hwy. 8, Hamilton	40.34	1,349
24	Port Dover to Simcoe	9.30	175
25	Jct. Q.E.W. to Acton	24.00	725
52	Jct. Hwy. 2 to Wentworth-Wellington county line	13.93	117
53	Jct. Hwy. 53 and Hwy. 56 to Hamilton east limits	2.43	105
54	Jct. Hwy. 3 to Jct. Hwy. 2, Cainsville	26.90	396
56	Elfrida to Jct. Hwy. 3	14.74	481
57	Bismark to Jct. Hwy. 3A	8.92	106
58	Jct. Hwy. 3 to Thorold	14.91	452
97	Galt to Freelton	13.67	65
99	Dundas to Jct. Hwy. 24	15.80	258
401	Jct. Hwy. 25 to Jct. Hwy. 8	28.49	2,460
Q.E.W.	Bronte interchange to Niagara Falls and Fort Erie	69.88	3,434
	Totals	586.14	22,275

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
5	Level crossing, 2.5 mi. west of east Jct. Hwys. 5 and 25	0.76	1963	0.12	0.64
6	Clappison Corners, southerly 1.40 mi.	1.40	1964	.....	1.26
7	C.N.R. overhead, 2.7 mi. west of Hwy. 10	0.93	1964	.....	0.93
8	Niagara Stone Road to St. David's Road interchange	4.12	1964	.....	4.12
8, 8A	Stamford northerly to St. David's west limits	3.25	1964	.....	0.25
25 Old Q.E.W.	C.N.R. overhead, westerly to Freeman cut-off	0.53	1964	.....	0.53
52	From Hwy. 97, southerly 1.65 mi.	1.65	1964	.....	0.33
57, 20 3A	Channelization at Hwys. 57 and 20, Bismark, and Hwys. 57 and 3A, Beckett's bridge	1.14	1963	0.34	0.80
99	From Hwy. 24, easterly 3.36 mi.	3.36	1964	.....	0.40
403	King-Main interchange to Hamilton	1.01	1962	0.20	0.91
403	East end at Hwy. 2 to Park Road (Brantford by-pass)	3.03	1963	1.98	1.05
403	Park Road to North Park Street, Brantford by-pass	1.33	1963	0.49	0.84
403	Aberdeen interchange, Hamilton	2.69	1963	0.81	1.88
403	North Park Street, westerly 2.31 mi., Brantford by-pass	2.31	1964	.....	1.47
403	Longwood Road to Aberdeen interchange, Hamilton	1.88	1964	.....	1.59
406	St. David's Road to Westchester Avenue, St. Catharines	3.60	1963	2.10	0.50
Q.E.W.	Niagara Street interchange, St. Catharines	1.43	1963	0.05	1.38
Q.E.W.	Q.E.W. and Service Roads, Garden City Skyway, St. Catharines	2.28	1963	0.76	1.52
Q.E.W.	Hwy. 25 interchange to Freeman interchange	6.24	1964	.....	4.99
Q.E.W.	St. David's Road interchange revision	0.37	1964	.....	0.37
	Totals	43.31		6.85	25.76



Grading on the Brantford By-pass — Hwy. 403, photo 5643 — (Hamilton District)

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Placed Tons 1964–65
3	McLennan's or Stoney Creek bridge, 6 mi. east of Jarvis	0.34	1964	.....	0.34	12,437
3	Fort Erie, westerly to Gorham Road	6.70	1964	.....	0.03	806
5	Level crossing, 2.5 mi. west of east Jct. Hwys. 5 and 25	0.76	1963	0.12	0.54	43,309
5, 8 52	Peter's Corners patrol yard (contract completed)	.....	1964	.....	.....	12,225
6	Clappison Corners, southerly 1.40 mi.	1.40	1964	.....	1.26	130,215
6, 401	Morriston patrol yard (contract completed)	.....	1964	.....	.....	14,855
7	C.N.R. overhead, 2.7 mi. west of Hwy. 10	0.93	1964	.....	0.93	51,981
8	Niagara Stone Road to St. David's Road interchange	4.12	1964	.....	4.12	13,790
8, 8A	Stamford, northerly to St. David's west limits	3.25	1964	.....	3.25	6,225
8 Q.E.W.	Homer patrol yard (contract completed)	.....	1964	.....	.....	11,722
25 Old Q.E.W.	C.N.R. overhead, westerly to Freeman cut-off	0.53	1964	.....	0.53	19,993
52	From Hwy. 97, southerly 1.65 mi.	1.65	1964	.....	0.33	11,083
57, 20 3A	Channelization at Hwy. 20 (Bismark) and Hwy. 3A, Beckett's bridge	1.14	1963	0.35	0.79	10,460
99	From Hwy. 24, easterly 3.36 mi.	3.36	1964	.....	0.04	5,283
403	King-Main interch. to Hamilton	1.01	1962	0.20	0.81	31,621
403	East end Hwy. 2, westerly to Park Road Brantford by-pass	3.03	1963	1.98	1.05	3,076
403	Park Road to North Park Street Brantford by-pass	1.33	1963	.....	1.33	45,709
403	Aberdeen Avenue interchange in Hamilton	2.69	1963	0.81	2.69	26,747
403	North Park Street, westerly 2.31 mi. (Brantford)	2.31	1964	.....	1.47	140,880
403	Longwood Road to Aberdeen Ave. interchange in Hamilton	1.88	1964	.....	1.59	162,815
406	St. David's Road to Westchester Avenue to St. Catharines	3.60	1964	2.10	1.50	43,309
406	Geneva Street extension, Westchester Avenue, northerly to St. Paul Street, St. Catharines	0.37	1964	.....	0.03	466
Q.E.W.	Niagara Street interchange to St. Catharines	1.43	1963	0.71	0.72	45,423
Q.E.W.	Q.E.W. and Service Roads, Garden City Skyway to St. Catharines	2.28	1963	0.76	1.52	20,594
Q.E.W.	North and South Service Roads, Vineland to Jordan Station	2.62	1964	.....	2.62	116,975
Q.E.W.	Hwy. 25 interchange to Freeman interchange, inclusive	6.24	1964	.....	4.99	355,207
Q.E.W.	Hwy. 20 underpass, 3.09 mi. east of Niagara Falls west limits	0.17	1964	.....	0.17	562
Q.E.W.	St. David's Road interchange revision	0.37	1964	.....	0.37	10,394
	Totals	53.51		7.03	33.02	1,348,162

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
2, 53	Patrol yard, Duff's Corners	Salt shed	1964	1964
Q.E.W. 8,	District storage yard, Winona	Electrical storage	1964	1964
Q.E.W.	Patrol yard, Homer	Salt shed	1963	1964

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Bridges painted	1		
Off-road parks maintained	2		
Roads snowploughed and kept open, King's Highways	25		793
Roadside picnic places maintained	78		
Routine maintenance, King's highways	25		773
Salt for de-icing roads (raw)		7,785	
Salt in sand, stockpiled		10,384	
Sand for winter maintenance		92,200	
Scale houses maintained	5		
Seeding by department's forces (acres)	121.20		
Shrubs received and planted this year	15,602		
Signs erected or replaced	4,472		
Snow fence erected, dismantled, stored			46.9
Traffic lights installed this year	8		
Weed control			210
Zone painting on King's highways (gals).	11,419		

DISTRICT No. 5 — OWEN SOUND

H. F. Gilbert, P.Eng., District Engineer

Construction

Our construction program consisted of the completion of a number of projects started in 1963. Work on Highways 6 and 9, Arthur, resulted in the improvements to a congested intersection. Highway 6, Chatsworth to Dornock, was completed, not only the grading but the paving; this included work through Chatsworth and Williamsford. A considerable amount of trouble was encountered in arriving at a hot mix design which would provide durability as well as a good driving surface. However, a compromise was reached. No other unusual problems were encountered during the construction season.

Maintenance

In 1964 the headquarters for the patrol at Singhampton was transferred to Stayner on Highway 91. A new paved yard was developed, complete with salt sheds and office building. The operation at Singhampton has ceased and also no sand was stockpiled at Collingwood. Improved efficiency and better service to the travelling public resulted from this move. A new five-bay metal patrol building was completed by the Department of Public Works at Shelburne and the yard was constructed and paved to the required standards. In addition, the D.H.O. yard at Hillsdale was paved. A new yard has been acquired on Highway 27, two miles north of Midhurst, and a salt shed was constructed there, together with a second one for the Cookstown yard. A sand stockpile was placed in the Barrie yard and faster sanding resulted on Highway 90. Highway illumination was installed at seven intersections and traffic signals were provided at the main intersection in Orangeville. Day labour work included extensive fencing, waterproofing decks of eight bridges, erection of a 220-foot Bailey bridge and gabion construction for river and bank control. The snowfall was heavy and over 200 inches occurred in some locations adjacent to Lake Huron. A heavy storm occurred after the 25th February and 16 inches snow resulted. All winter equipment was pressed into service and some routes had double the number of heavy plows working on them. All patrols put on at least one "V" plow and one-way plows were used for follow-up. We have 32 plows in the district for 16 patrols. Interference to the travelling public occurred mainly from poor-to-nil visibility in this unusually severe storm. Snow blowers cut back the high banks after the storm as a safety measure. The sign shop erected 2,105 new signs along the highway. Four two-ton patrol trucks were used instead of the present standard three-ton units. These lighter trucks proved more adaptable and less costly to maintain. The signal lights on the patrol trucks have been changed to give four-way flashing lights for parking and emergency purposes.

Considerable thought was given to the pending boundary change and increased mileage to District 5. A majority of the patrols have had their allotted sections of road changed to improve efficiency and equalize the work load. Two new roadside parks north of Wiarton and north of Orangeville have been developed for the convenience of the travelling public. Several roadside table sites were eliminated in these areas.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
4	C.N.R.	Mileage 23, 27, Walkerton sub-division, Lots 33 and 34, township of Bentinck, county of Grey, Hwy. 4, east of Hanover	2 flash. lights

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
4	Roseborough bridge, .2 mi. west of Durham	N/A	1964	N/A	115.60
6	Conestogo River bridge in Arthur, south 0.7 mi. including structure	0.7	1963	0.7	3,811.36
6	Dornoch to Chatsworth	10.33	1964	10.33	32,030.66
6	Farley's Creek bridge, 1 mi. north of Arthur	N/A	1964	N/A	19.00
6	Mitchell's Creek bridge, 2 mi. north of Arthur	N/A	1964	N/A	20.00
9	Conestogo River bridge, 0.1 mi. east of Jct. Hwys. 6 and 9	N/A	1964	N/A	26.00
9	Conestogo River bridge, 0.4 mi. east of Jct. Hwys. 6 and 9	N/A	1964	N/A	40.00
9	Conestogo River bridge, 1.1 mi. east of Jct. Hwys. 6 and 9	N/A	1964	N/A	25.00
9	Conestogo River bridge, 3 mi. east of Jct. Hwys. 6 and 9	N/A	1964	N/A	23.00
9	Grand River bridge, 2 mi. east Jct. Hwys 104 and 9	N/A	1964	N/A	190.00
9	7 mi. west of Orangeville	.5	1964	.5	600.00
10, 24	Hockley sideroad, 2 mi. north of Orangeville	N/A	1964	N/A	100.00
10, 24	3 mi. south Jct. Hwys. 10, 24 and 89 (Primrose)	N/A	1964	N/A	80.00
24	Shelburne yard	N/A	1964	N/A	650.00
26	Marle Creek bridge, 3 mi. west Jct. Hwys. 26, 27	N/A	1964	N/A	42.00
26	Pretty River bridge in Collingwood, including approaches	.66	1963	.66	3,275.62
26	C.P.R. overhead bridge, 2 mi. east of Owen Sound	N/A	1964	N/A	233.60
27	Brown's Creek bridge, .5 mi. south of Jct. Hwys. 27 and 92	N/A	1964	N/A	54.30
27	Wye River bridge, 1 mi. north of Jct. Hwys. 27 and 92	N/A	1964	N/A	45.20
27	Wye River bridge, 2 mi. north Jct. Hwys. 27, 92	N/A	1964	N/A	41.90
92	Wasaga Beach bridge at Wasaga Beach	N/A	1964	N/A	283.10
93	Hillsdale patrol yard	N/A	1964	N/A	861.15
400	C.P.R. overhead at Craighurst	N/A	1964	N/A	142.10
	Totals	12.19		12.19	42,709.59

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
6	1 mi. north of Wiarton to 14 mi. north of Wiarton	13	39,700	417.00
91	Duntroon to Stayner	5	15,839	138.39
	Totals	18	55,539	555.39

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
6	From limits at Tobermory ferry dock, southerly 10 mi.	10	32,000	1,314.26

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
6	Conestogo River bridge in Arthur	1963	1964	Reinforced concrete and prestressed beams
26	Pretty River bridge in Collingwood	1963	1964	Reinforced concrete and prestressed beams

Crushed Gravel and Stone by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
6	Dornoch to Chatsworth	10.33	89,689.89
6	Patrol yard 1.5 mi. south of Williamsford	.....	5,997.81
6	Conestogo River bridge in Arthur, south .7 mi.	0.70	4,716.60
6, 10	0.5 mi. south of Owen Sound	.....	4,007.83
10	Shelburne north limits, northerly 3.3 mi.	3.30	38,698.50
21	Southampton to Kincardine	26.00	15,993.77
21	Southampton easterly to Elsinore	5.81	56,504.29
24	Shelburne to Singhampton	19.00	5,990.88
26	3.0 mi. east of Owen Sound	.....	3,991.80
26	Pretty River bridge in Collingwood	.66	4,716.60
27	D.H.O. yard 1 mi. north of Waverly	.....	2,036.69
93	D.H.O. yard .5 mi. north Jct. Hwys. 93 and 400	.....	3,001.67
	Totals	65.80	235,346.33

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
4	Flesherton to Jct. Hwy. 9	40.80	162
6	Arthur to Tobermory	118.52	3,045
9	Jct. Hwys. 9 and 104 to Arthur-Kincardine	41.36	110
10	Orangeville to Owen Sound	57.84	1,490
12	Jct. Hwys. 12 and 27 to Midland	.83	.....
21	Jct. Hwys. 9 and 21 to Jct. Hwys. 6 and 21	42.91	1,335
24	Shelburne to Collingwood	31.51	1,764
26	Barrie to Owen Sound	71.42	4,481
27	Cookstown to Penetang	40.92	2,490
89	Cookstown to Harriston	23.01	5,192
90	Barrie to Angus	11.38	8
91	Stayner to Duntroon	5.09	758
92	Elmvale to Wasaga Beach	8.67	8
93	Craighurst to Jct. Hwys. 93 and 27	17.41	29
104	Jct. Hwys. 9 and 104 to Grand Valley	1.76	288
400	Crownhill to Jct. Hwy. 93	9.90	72
	Totals	523.33	21,232

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
6	Dornoch to Chatsworth	9.25	1963	.25	9.00
6	Conestogo River bridge in Arthur, southerly 0.7 mi.	0.70	1963	....	.70
10	Shelburne north limits, northerly 3.3 mi.	3.30	1964	....	3.30
21	Southampton, easterly to Elsinore	5.81	1963	....	5.81
26	Pretty River bridge in Collingwood	.66	1963	....	.66
	Totals	19.72		.25	19.47

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
6	Dornoch to Chatsworth	10.33	1963	5.25	5.08	110,939.91
6	Conestogo River bridge in Arthur, south 0.70 mi.	.70	1963		.70	42,065.97
10	Shelburne north limits, northerly 3.3 mi.	3.30	1964		3.30	131,797.30
21	Southampton to Elsinore	5.81	1963		5.81	277,492.18
26	Pretty River bridge at Collingwood	0.66	1963		0.66	15,410.47
	Totals	20.80		5.25	15.55	577,705.83

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
91	East limits of Stayner	Salt shed	1964	1964
91	East limits of Stayner	Heated storage shed	1964	1964
91	East limits of Stayner	Patrol office and tool shed	1964	1964
27	3 mi. north of Cookstown	Salt shed	1964	1964
27	4 mi. north Jct. Hwys. 26 and 27	Salt shed	1964	1964

Totals of Other Work Done

Item	Total Number	Total Gals.	Total Tons	Total Miles
Bridges painted	7	356		
Calcium dust layer on gravel roads			80	18
Off-road parks maintained	14			
Roads snowploughed and kept open, King's highways				575
Roadside picnic places maintained	64			
Routine maintenance, King's highways				575
Salt for de-icing roads			12,700	
Salt in sand, stockpiled			4,300	
Sand for winter maintenance			84,750	
Seeding by department's forces (sq. yds.)	24.7			
Shrubs received and planted this year	2,490			
Signs erected or replaced	3,804			
Snow fence erected, dismantled, stored				170
Traffic lights installed this year	1			
Weed control		575		643
Zone painting on King's highways		7,501.5		617.9

DISTRICT No. 6 — TORONTO

J. C. Thatcher, P.Eng., District Engineer

Construction

The first section of the collector-distributor freeway design being used in the Toronto by-pass section of Highway 401 was completed from Hogg's Hollow to west of the Avenue Road interchange providing a pre-view of the future appearance of Highway 401 through Metropolitan Toronto.

During the year, several grading and structure contracts were in progress on the Highway 401 by-pass section between Avenue Road and Highway 400. Critical path scheduling was used and found to be invaluable in co-ordinating work and maintaining progress. The co-ordinate system of layout was thoroughly tested and proved superior to more conventional methods. In both these improved methods, the department computer equipment played a large part.

The year 1964 also saw the completion of the controlled access highway to the Toronto International Airport as well as the widening of Dixon Road. A new bridge was constructed over the Black River in Baldwin and Highway No. 2 was widened to an urban four-lane section through the village of Bronte. A 3.8-mile section of Highway 401 concrete pavement was resurfaced with a ¾-inch course of hot mix sand asphalt.

A section of Highway 7, from Bathurst Street to Highway 400, was widened to four lanes and except for a small amount of top course asphalt and minor grading work, is completed. Work on the Etobicoke bridge at Brampton, on the C.N.R. and C.P.R. structure on Highway 9, and on Highway 50 from Palgrave southerly is well under way with completion anticipated during the summer of 1965. A contract for the widening of Highway 10 from Highway 5 northerly through Cooksville was commenced. This contract utilizes the existing structure for the span over the two southbound lanes of Highway 10 and an additional span using the existing abutment as a centre pier will be constructed over the two northbound lanes.

A contract for widening Highway 10 to four lanes, from Brampton northerly to Victoria, was awarded late in the fiscal year and is unusual in that it contains a two-mile section of experimental base construction. This experimental section is designed to evaluate different types and depths of cement-treated and asphalt-treated bases with the more usual granular base courses. Differing pavement designs will be evaluated. This work is being done in close collaboration with the Research Branch.

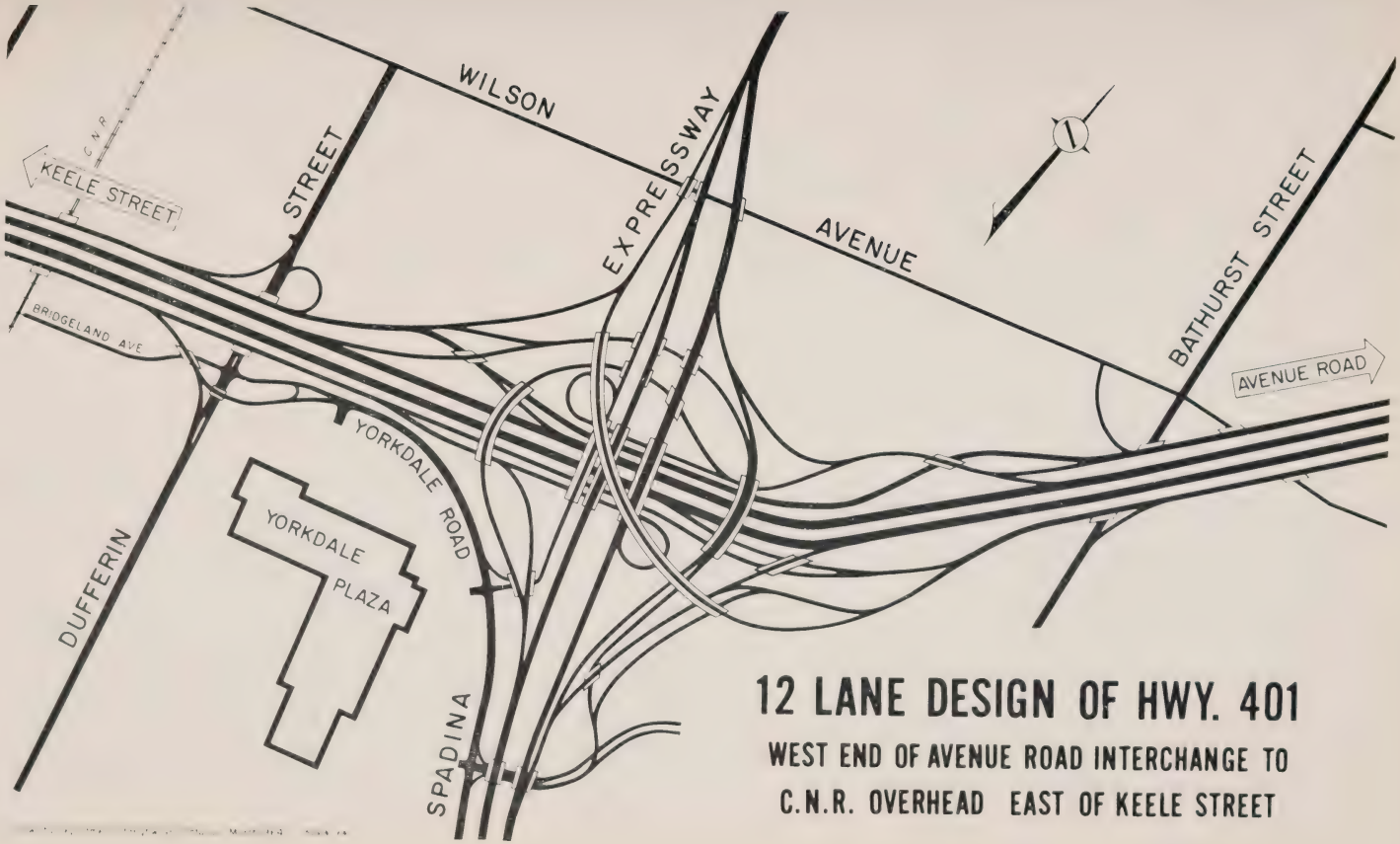
The total construction expenditure was in excess of $21 millions, indicative of the volume of work completed during the year.

Maintenance

Normal summer and winter maintenance operations were carried out. The winter was somewhat more severe than usually experienced, due to prolonged periods of snow and a late spring. The winter maintenance of the 780 miles of highways in the district required 138,000 tons of sand and 31,100 tons of coarse salt.

Four hot mix patching contracts were let to repair highway surfaces damaged by frost and by traffic. A total of 14,063.17 tons of hot laid asphalt were used.

Bridge repairs and painting of handrails were carried on throughout the summer season.



12 LANE DESIGN OF HWY. 401

WEST END OF AVENUE ROAD INTERCHANGE TO
C.N.R. OVERHEAD EAST OF KEELE STREET

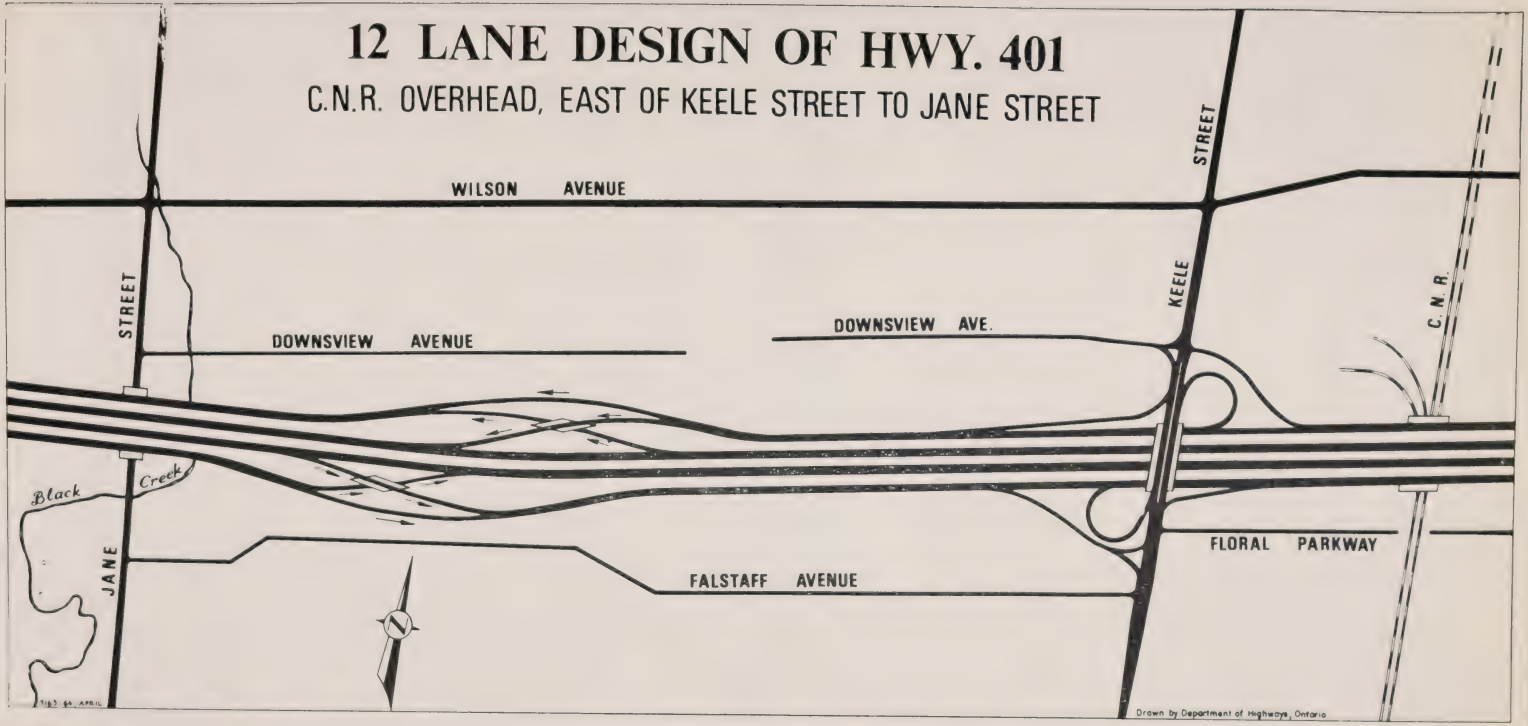
Extensive use was made of mulch seeding on reconstructed highways, a total of 111.5 acres being seeded by day labour and by seeding contracts. Extensive use was made of the "Tree Saver" to move trees and shrubs from the Macdonald-Cartier Freeway prior to reconstruction. Weed control was carried out throughout the district using up-to-date spraying methods, supplemented by mowing of grass to improve the appearance of the highways as needed.

A dust control program for shoulders was carried out, with 736.78 tons of 35 per cent calcium chloride (onhydrous) in water solution. This provided some temporary relief from dust.

The Emergency Traffic Patrol was active during the year, assisting in the maintenance of traffic on the Macdonald-Cartier Freeway in the vicinity of Toronto. The Emergency Patrol has shown itself to be extremely useful in expediting traffic, particularly during rush hours. Besides being of assistance to stranded motorists, the patrol has on a number of occasions been instrumental in saving motorists' lives, in one case using torches and bars to remove an injured motorist from a wrecked automobile and rushing an expectant mother to the hospital from a wrecked automobile in another.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
401	Avenue Road	1.08	1962	.16	.92	11,950
C.A.H.	Renforth Drive from Hwy. 401, from Hwy. 27, Malton to Dixon Road, and Dixon Road	3.22	1963	1.77	1.45	5,463
401	Between Bathurst Street and Wilson Avenue	.....	1963	64%	36%	436
2	Dunbarton, 2.2 mi. east Metro limit, east 1.08 mi.	1.08	1963	.64	.44	2,565
401	Dufferin Street interchange	.....	1963	74%	26%	2,726
401	Jane Street interchange, Black Creek, culvert extensions	.48	1963	.29	.19	771
48	Black River bridge, 3 mi. south of Sutton	.28	1964	.....	.28	1,270
401	Hwy. 400 interchange from Jane Street to west Wendell Avenue	1.00	1963	.....	.25	30,242
401	From west limits, Avenue Road, C.N.R. overhead bridge	2.57	1964	.....	1.03	10,687
10	Etobicoke Creek, 4.9 mi. north Hwy. 401	.....	1964	.....	14%	478
9	C.N.R. and C.P.R. overhead bridge, 3 mi. east Hwy. 50	.75	1964	.....	.10	366
2	Town Oakville, Nelson Street west to Bronte Creek	.48	1964	.....	.48	3,300
7	Bathurst Street to Hwy. 400	3.80	1964	.....	3.19	37,627
401	C.N.R. overhead bridge, east of Keele Street to Jane Street	1.90	1964	.....	.75	8,899
2	Owenwood Road, 1.25 mi. west of Port Credit	.17	1964	.....	.17	708
401	Hogg's Hollow, north and south structures, collector roads	.31	1964	.....	.20	652
Q.E.W.	2.9 mi. and 4.9 mi. west of Hwy. 10	.60	1964	.....	.60	4,176
	Totals	17.72		2.86	10.05	122,316


12 LANE DESIGN OF HWY. 401
C.N.R. OVERHEAD, EAST OF KEELE STREET TO JANE STREET
WILSON AVENUE
STREET
KEELE
STREET
DOWNSVIEW AVENUE
DOWNSVIEW AVE.
C.N.R.
Black Creek
JANE
FALSTAFF AVENUE
FLORAL PARKWAY
N
Drawn by Department of Highways, Ontario

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Tons Placed 1964–65
Var.	Various isolated locations	1,073

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
401	2.9 mi. west Hwy. 27, west to Hwy. 10 interchange	3.80	6,407

Bituminous Surface Treatment

Hwy. No.	Location	Tons Dix-Seal Used 1964–65
2	Gloucester Avenue, Oakville, to 1 mi. easterly (isolated patching)	580
400	King sideroad, northerly (isolated patching)	1,010
400	Finch Avenue to King sideroad (isolated patching)	60
401	Dixie Road to Hwy. 25 (isolated sections)	110
Q.E.W.	Fifth Line (Toronto township) to Bronte Road (isolated sections)	1,061
Q.E.W.	Humber River to Mimico Creek (isolated patching)	200
	Totals	3,021



Aerial view of Hwy. 400 — Macdonald-Cartier Freeway Interchange construction. photo 6052 — (Toronto District)

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Spadina, Bridge 3, Dufferin Street Interchange	1963	1964	Prestressed concrete beam
401	Jane Street, Jane Street interchange	1963	1964	Prestressed concrete beam
401	Black Creek culvert, Black Creek	1963	1964	Reinforced concrete
48	Black River bridge, 3 mi. south of Sutton	1964	1964	Reinforced concrete, precast concrete beam
401	Bridge 1, Hwys. 400 and 401 interchange	1963	1964	Prestressed concrete
401	Bridge 4, Hwys. 400 and 401 interchange	1963	1964	Prestressed concrete
401	Bridge 5, Hwys. 400 and 401 interchange	1963	1964	Prestressed concrete
401	Bridge 8, Hwys. 400 and 401 interchange	1963	1964	Prestressed concrete
401	Bridge 6, Hwys. 400 and 401 interchange	1964	.....	Prestressed concrete
401	Bridge 9, Hwys. 400 and 401 interchange	1964	.....	Prestressed concrete
401	Bridge 11, Hwys. 400 and 401 interchange	1963	1964	Prestressed concrete
401	Bridge 12, Hwys. 400 and 401 interchange	1963	.....	Prestressed concrete
401	Bridge 13, Hwys. 400 and 401 interchange	1964	.....	Reinforced concrete, rigid frame
401	Bridge 7, Hwys. 400 and 401 interchange	1964	.....	Prestressed concrete
401	Bridge 10, Hwys. 400 and 401 interchange	1964	.....	Prestressed concrete
401	Bridge 4, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 5, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 11, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 12, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 13, north, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 13, south, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 14, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 15, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 22, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 23, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 24, Spadina interchange	1963	.....	Prestressed concrete
401	Bridge 1, Keele Street	1964	1964	Structural steel
401	Bridge 3, Between Keele and Jane Streets, W/B—B/W	1964	.....	Prestressed concrete
401	Bridge 4, Between Keele and Jane Streets E/B—B/W	1964	.....	Prestressed concrete
7	Don River bridge, between Bathurst Street and Hwy. 400	1964	1964	Reinforced concrete, rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65	Pave. Width
401	Dufferin Street interchange	.....	1963	72%	28%	882	Various
401	Hwy. 400 interchange from Jane Street to west Wendell Ave.	1.00	1963	.....	65%	5,556	Various
401	C.N.R. o'head bridge east of Keele Street to Jane Street	1.90	1964	.....	50%	1,030	Various
Q.E.W.	2.9 mi. and 4.9 mi. west of Hwy. 10	.60	1964	.....	.60	4,176	Various
	Totals	3.50		72%	.60	11,644	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Sq. Yds. Placed 1964–65	Pave. Width
401	Avenue Road	1.08	1962	.58	.50	45,024	36′ Ave.
C.A.H.	Renforth Drive from Hwy. 401 from Hwy. 27 to Malton to Dixon Road and Dixon Road	3.22	1963	3.15	.07	4,629	48′ Ave.
401	Hwy. 400 interchange from Jane Street to west Wendell Ave.	1.00	1963	.....	30%	88,721	Various
401	From west limits Avenue Road to C.N.R. overhead bridge	2.57	1964	.....	36%	100,931	Various
401	C.N.R. o'head bridge east of Keele Street to Jane Street	1.90	1964	.....	28%	71,220	Various
	Totals	9.77		3.73	.57	310,525	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
401	Avenue Road	.46	50,236
2	Dunbarton, 2.2 mi. east Metro limits, east 1.08 mi.	.04	6,222
401	Dufferin Street interchange	.....	15,989
401	Jane Street interchange, Black Creek, culvert extensions	.21	30,612
48	Black River bridge, 3.0 mi. south of Sutton	.28	17,239
401	Hwy. 400 interchange, from Jane Street west, Wendell Avenue	.33	584,365
401	From west limits Avenue Road to C.N.R. overhead bridge	1.18	287,483
50	Palgrave, south 3.0 mi.	.03	1,190
10	Etobicoke Creek, 4.9 mi. north Hwy. 401	9%	4,880
9	C.N.R. and C.P.R. overhead bridge, 3.0 mi. east Hwy. 50	.11	5,225
2	Town of Oakville, Nelson Street, west to Bronte Creek	.48	16,750
7	Bathurst Street to Hwy. 400	3.69	240,201
401	C.N.R. overhead bridge, east of Keele Street to Jane Street	1.01	272,646
2	Owenwood Road, 1.25 mi. west of Port Credit	.17	1,211
401	Hogg's Hollow, north and south structures, collector roads	.17	7,922
Q.E.W.	2.9 mi. and 4.9 mi. west of Hwy. 10	.60	38,630
10	From Hwy. 5 (Cooksville), north to Burnhamthorpe Road	.01	1,370
	Totals	8.77	1,582,171

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Tons Placed 1964–65
Var.	Throughout district at various locations	41,707



Widening Hwy. 7 to four lanes, west of Dufferin Street. photo 5657 — (Toronto District)

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
401	Avenue Road	1.08	1962	.95	.13
2	Dunbarton, 2.2 mi. east Metro limits, east 1.08 mi.	1.08	1963	1.04	.04
401	Dufferin Street interchange	.....	1963	97%	3%
401	Jane Street interchange, Black Creek, culvert extensions	.48	1963	.38	.10
401	Hwy. 400 interchange from Jane Street to west Wendell Avenue	1.00	1963	.01	.35
401	From west limits Avenue Road to C.N.R. overhead bridge	2.57	1964	.....	2.21
50	Palgrave, south 3.0 mi.	3.06	1964	.....	1.07
10	Etobicoke Creek, 4.9 mi. north Hwy. 401	.....	1964	.....	20%
9	C.N.R. and C.P.R. overhead bridge, 3.0 mi. east Hwy. 50	.75	1964	.....	.41
2	Town of Oakville, Nelson Street, west to Bonte Creek	.48	1964	.....	.48
7	Bathurst Street to Hwy. 400	3.80	1964	.....	3.72
401	C.N.R. overhead bridge, east of Keele Street to Jane Street	1.90	1964	.....	1.71
2	Owenwood Road, 1.25 mi. west of Port Credit	.17	1964	.....	.17
401	Hogg's Hollow, north and south structures, collector roads	.31	1964	.....	.20
Q.E.W.	2.9 mi. and 4.9 mi. west of Hwy. 10	.60	1964	.....	.60
10	From Hwy. 5 (Cooksville), north of Burnhamthorpe Road	1.63	1965	.....	.01
	Totals	18.91		2.38	11.20

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
401	Avenue Road	1.08	1962	.50	.58	50,236
2	Dunbarton, 2.2 mi. east Metro limits, east 1.08 mi.	1.08	1963	1.04	.04	6,222
401	Dufferin Street interchange	.....	1963	81%	19%	15,989
401	Jane Street interchange, Black Creek, culvert extensions	.48	1963	.31	.17	29,979
48	Black River bridge, 3 mi. south of Sutton	.28	1963	.....	.28	17,239
401	Hwy. 400 interchange, from Jane Street to Wendell Avenue	1.00	1963	.01	.35	584,365
401	From west limits Avenue Road to C.N.R. overhead bridge	2.57	1964	.....	1.18	287,483
50	Palgrave, south 3.0 mi.	3.06	1964	.....	.03	1,190
10	Etobicoke Creek, 4.9 mi. north of Hwy. 401	.....	1964	.....	9%	4,880
9	C.N.R. and C.P.R. o'head bridge, 3.0 mi. east of Hwy. 50	.75	1964	.....	.11	5,225
2	Town of Oakville, Nelson Street, west to Bronte Creek	.48	1964	.....	.48	16,550
7	Bathurst Street to Hwy. 400	3.80	1964	.....	3.69	235,371
401	C.N.R. overhead bridge, east of Keele Street to Jane Street	1.90	1964	.....	1.01	272,646
2	Owenwood Road, 1.25 mi. west of Port Credit	.17	1964	.....	.17	1,211
401	Hogg's Hollow, north and south structures, collector roads	.31	1964	.....	.17	7,922
Q.E.W.	2.9 mi. and 4.9 mi. west of Hwy. 10	.60	1964	.....	.60	38,630
10	From Hwy. 5 (Cooksville), north Burnhamthorpe Road	1.63	1965	.....	.01	1,370
	Totals	19.19		1.86	8.87	1,576,508

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
400	Temporary patrol office at Sheppard Avenue yard	Patrol office	1964	1964
400	Temporary patrol office at Law's Pit yard	Patrol office	1964	1964
400	Extension of salt shed at Sheppard Avenue yard	Salt storage	1964	1964
401	Dual salt shed at Kennedy Road yard	Salt storage	1964	1964
88	Construction of salt shed at Bradford yard	Salt storage	1964	1964
401	Construction of salt shed at Whitby yard	Salt storage	1964	1964
400	Construction of salt shed at Law's Pit yard	Salt storage	1964	1965
Var.	Alterations to numerous houses in use as construction field offices	.....	.....	.....
10	Construction of salt shed at Caledon yard	Salt storage	1964	1965

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Roads snowploughed and kept open, King's highways			780
Roadside picnic places maintained	4		
Routine maintenance, King's highways			780
Salt for de-icing roads (raw)		31,100	
Salt in sand, stockpiled		4,800	
Sand for winter maintenance		138,000	
Scale houses maintained	6		
Seeding by department's forces (acres)	111.5		
Shrubs received and planted this year	1,404		
Signs erected or replaced	10,252		
Snow fence erected, dismantled, stored			80
Traffic lights installed this year	23		
Weed control			1723.5
Zone painting on King's highways	26,550		

DISTRICT No. 7 — PORT HOPE, ONTARIO

F. B. Whiteley, P.Eng., District Engineer

Construction

A construction program saw the completion of a high-level structure over the Trent Canal at Rosedale, on Highway 35, and the paving of its approaches. Also, on Highway 35, structures were started over the Trent Canal at Fenelon Falls, and in the village of Coboconk.

On Highway 12 grading was begun on the Beaverton by-pass and the necessary structures were started.

On Highway 36 a new structure was completed at Squaw Creek and grading and granular base was practically complete from Nogies Creek to Highway 507.

Grading, granular base and paving was carried out on Highway 33 through the village of Wellington in Prince Edward County.

Maintenance

During this past fiscal year, a new patrol yard site and sand stockpiling area was paved at Coboconk. The construction of a new five-bay patrol garage at Young's Point was completed, five new salt sheds were completed by day labour forces at Beaverton, Port Hope, Hilton, Pontypool and Lorneville. The patrol sites at Grafton, Roseneath, and Bloomfield including the sand stockpiling area were paved. The proposed patrol yard sites at Pontypool and Lorneville were graded and gravelled.

Eight contracts for stockpiling crushed gravel were let.

Approximately three miles of hot mix patching was carried out by contract at various locations in the district; 37 miles of surface treatment was done at various locations on Highways 33, 45, 121, 503, 505 and 507; and 57 miles of bituminous prime on gravel roads was completed at various locations on Highways 7A, 7B, 28, 36, 46, 503, 505 and 507.

Day labour construction was carried on on two one-mile projects, one in the summer and the other in the winter, in the vicinity of Head Lake on Highway 50. The grade and alignment on this two-mile section were improved to secondary road standards.

Massie's bridge, on Highway 2 east of Cobourg, which was an extremely narrow bridge, was replaced by day labour with a large multiplate arch culvert.

Pre-contract clearing was carried out by day labour on Highway 7A from Bethany to the intersection of Highway 115 and on new Highway 48 in the vicinity of Port Bolster.

Maintenance

The district forestry crew grass seeded 171,820 square yards, and planted 2,931 seedlings, trees and shrubs. An extensive program of weed spraying was carried out on 543 miles of highway. During the winter the crew removed 767 dead or dangerous trees. Further development was undertaken at all four service area picnic sites. Two picnic sites at service centres E-1, 2, 3 were opened to the public. 300 feet of living snow fence or snow hedges was planted this year.

The sign shop completed an inventory of all signs in the district by location, type and conditions which will be of considerable assistance in our annual re-signing program. They replaced or erected 3,981 signs during the year.

The zone-painting crew zone-painted 730 miles of highway using the method of laying the glass beads over the fresh paint. This appears to be a definite improvement over past years' methods in that the zone-painting lines do not deteriorate as quickly.

A day labour program of bridge painting was carried out on four bridges and two were painted by contract under our supervision. Minor repairs were made to numerous bridges throughout the district.

Several day labour projects were undertaken at the Belleville Bay bridge. Bank protection using a concrete retaining wall and wire gabions was placed at the south approach to the bridge. Extensive repair work was started on the swing mechanism and the steel grating of the bridge.

Reconstruction of and resurfacing on existing connecting links was carried out by the towns of Trenton, Cobourg, Lindsay and Port Hope.

Fifteen off-road parks were maintained by patrol crews along with 78 roadside picnic sites.

Delineator posts were placed on the legs of three interchanges on Highway 401 as a test. The purpose was to attempt to keep the travelling public off the shoulder and therefore reducing some of the brooming costs required to keep the paved surface free of stone.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
12	C.N.R.	Crossing at Brechin	2 flash. lights
33	C.N.R.	Crossing at Consecon	2 flash. lights, bell
33	C.N.R.	Crossing near Trenton	2 flash. lights, bell
33	C.N.R.	Crossing near Consecon	2 flash. lights, bell
33	C.N.R.	Crossing west of Bloomfield	2 flash. lights, bell
401 Ser. Rd.	C.N.R.	Crossing at Pickell Road, south of Darlington station	2 flash. lights, 2 short-arm gates, bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Placed Tons 1964–65
33	Village of Wellington	1.17	1964	1.17	4,474.62
35	Channelization at Rosedale	0.30	1964	0.30	461.18
	Totals	1.47		1.47	4,935.80

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1964–65	Tons Placed 1964–65
503	From 1.0 mi. west of Norland to .5 mi. west of Head Lake	4.5	4.5	7,650

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Compl. 1964–65	Gals. Used 1964–65	Tons Used 1964–65
7A	Cavan east to Jct. Hwy. 115	0.20	516.0	18.5
7B	Jct. Hwys. 7 and 7B west	0.87	2,244.5	80.6
7B	Lansdowne Street, Jct. Hwy. 28, east to Wightman Ave. east	1.00	2,579.9	92.6
28	New west limits Peterboro, east	2.26	5,830.5	209.1
36	Nogie's Creek, east	1.00	2,579.9	92.6
46	Jct. 505, east	1.50	3,869.8	138.8
503	Uphill, east	10.80	27,862.8	999.1
503	Sebright, south	8.20	21,155.1	758.6
505	Uphill to Victoria Road	10.50	27,088.8	971.5
507	North Jct. Hwy. 36, north	15.50	39,988.3	1,434.1
507	South Jct. Hwy. 36 to Jct. Hwy. 28	5.00	12,899.4	462.6
	Totals	56.83	146,615.0	5,258.1

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
33	Picton west limits, west to Jct. Hwys. 33 and 14	4.3	11,634.6	576.1
45	North limits Baltimore, north	3.5	9,470.0	468.9
121	South Jct. Hwys. 121 and 649, south	14.3	38,691.6	1,915.9
503	Jct. Hwys. 46 and 503, north	5.0	13,528.6	669.9
505	Jct. Hwys. 46 and 505, north	2.5	6,764.3	335.0
507	South Jct. Hwys. 36 and 507, south	7.5	20,292.9	1,004.9
	Totals	37.1	100,382.0	4,970.7

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
36	Squaw River bridge, 3.7 mi. east Nogies Creek	1964	1964	Reinforced concrete and prestressed beams

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
12 T.C.	Beaverton by-pass	1.53	24,132.0
12 T.C.	Beaverton by-pass, Beaverton River bridge on Hwy. 12, and Beaverton River bridge on County Road 15	0.03	494.0
14	Bloomfield patrol yard	.....	2,165.5
28	D.H.O. patrol yard, 1.5 mi. north Young's Point	.....	4,996.9
28	D.H.O. patrol yard, Jct. Hwys. 115 and 28	.....	4,995.9
33	Village of Wellington	1.17	10,006.3
35	Channelization at Rosedale	0.30	2,283.0
35	1 mi. north Jct. Hwys. 35 and 35A	.....	4,995.4
36	From Nogies Creek village to Sec. Hwy. 507	4.10	44,245.0
45, 401	Roseneath and Grafton patrol yards	.....	5,762.7
69	2 mi. north of Udney	.....	5,007.5
401	D.H.O. patrol yard, Jct. Hwys. 401 and 115	.....	9,989.9
503	1.5 mi. west of Norland	.....	2,992.2
503	D.H.O. patrol yard, 3.0 mi. west of Head Lake	.....	3,989.5
503	From 1 mi. west Head Lake to 2 mi. west	1.00	4,007.1
	Totals	8.13	130,063.2

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
36	Patrol 7, Jct. Hwys. 28-36 to Nogies Creek	18.65	33.6
46	Patrol 13, Jct. Hwys. 46-35 to Jct. Hwys. 46-505	10.10	140.0
503	Patrol 13, Jct. Hwys. 503-505 to Jct. Hwys. 503-35	10.38	646.8
503	Patrol 12, Jct. Hwys. 46-503 to Jct. Hwys. 503-505	16.38	2,437.4
505	Patrol 12, Jct. Hwys. 46-505 to Jct. Hwys. 505-503	11.00	498.4
507	Patrol 7, Jct. Hwys. 36-507 to Haliburton county line	21.60	1,815.8
	Totals	88.11	5,572.0

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65
12 T.C.	Beaverton by-pass	6.96	1964	3.62
12 T.C.	Beaverton by-pass, Beaverton River bridge on Hwy. 12 and Beaverton River bridge on County Road 15	0.56	1965	0.08
33	Village of Wellington	1.17	1964	1.17
35	Channelization at Rosedale	0.30	1964	0.30
35	From Nogies Creek village to Sec. Hwy. 507	5.62	1964	5.28
	Totals	14.61		10.45

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Placed Tons 1964–65
12 T.C.	Beaverton by-pass	6.96	1964	1.60	66,423.00
12 T.C.	Beaverton by-pass, Beaverton River bridge on Hwy. 12 and Beaverton River bridge on County Road 15	0.56	1965	0.03	1,125.00
33	Village of Wellington	1.17	1964	1.17	28,700.72
35	Channelization at Rosedale	0.30	1964	0.30	3,341.00
36	From Nogies Creek village to Sec. Hwy. 507	5.62	1964	5.28	122,238.00
	Totals	14.61		8.38	221,827.72

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
12	Beaverton	Salt shed	1964	1965
28	Jct. Hwys. 401 and 28	Salt shed	1964	1964
30	Jct. Hwys. 401 and 30	Salt shed	1964	1964
35	1 mi. north of Jct. Hwys. 115 and 35	Salt shed	1964	1964
46	1 mi. north of Lorneville	Salt shed	1964	1965

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Bridges painted	6	450	.....
Calcium dust layer on gravel roads	.....	87.05	.....
Off-road parks maintained	15	.....	.....
Roads snowploughed and kept open, King's highways	18	.....	708.23
Roads snowploughed and kept open, secondary highways	4	.....	96.79
Roadside picnic places maintained	78	.....	.....
Routine maintenance, King's highways	.....	.....	708.23
Routine maintenance, secondary highways	.....	.....	96.79
Salt for de-icing roads (raw)	.....	15,219.85	.....
Salt in sand, stockpiled	.....	4,690.00	.....
Sand for winter maintenance	92,756.80	.....	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (acres)	35.5	.....	.....
Shrubs received and planted this year	100	.....	.....
Signs erected or replaced	3,981	.....	.....
Snow fence erected, dismantled, stores	.....	.....	101.7
Snow hedges planted this year	300 lf.	.....	.....
Weed control	.....	.....	542.87
Zone painting on King's highways (gals).	.....	10,296.5	721
Zone painting on secondary highways (gals.)	.....	95.0	9

DISTRICT No. 8 — KINGSTON

E. A. Cash, P.Eng., District Engineer

Construction

With the opening in the late fall, thirty miles of concrete paving on the westbound lane, westerly from Kingston, Highway 401, was brought up to full four-lane status all the way from Toronto to Gananoque.

The removal of a temporary two-way flow of traffic on the corresponding section of the eastbound lane yielded a great improvement in travelling conditions. Two new underpasses were included in one of the three contracts.



Aerial view of Hwy. 401 — Palace Rd. Interchange — east of Napanee, photo 6129 — (Kingston District)

Contracts for the grading of two new service centre sites between Kingston and Napanee were substantially completed and the lessees began construction of the buildings and facilities. Work commenced on a new interchange between Highway 401 and Highway 2, at the east end of Gananoque, and on 3½ miles grading of four-lane highway to replace the existing two-lane section of Highway 401 between Gananoque and Brockville. Rock work was continued through the winter.

Highway 42 was substantially improved between Forthton and Athens by the completion of a grading contract, followed immediately by a contract for base course paving. In Delta, the bridge over Beverley Creek was opened to traffic.

On Highways 2 and 41, south of Marysville, a railway crossing was eliminated by means of a new structure which was completed and opened to traffic, together with four miles of grading and hot mix paving. A contract for the sub-structure and approaches for the Quinte Skyway was awarded in November but very little work was done owing to severe winter weather.

Easterly from Trenton, in the vicinity of the R.C.A.F. base, very good progress was made on the reconstruction of a section of a four-lane road. Owing to the restricted right-of-way available, a relatively narrow "singing" median was incorporated in the design to separate opposing lanes of traffic.

Resurfacing contracts were carried out on nearly eight miles of Highway 7 (T.C.H.) west of Kaladar, on six miles of Highway 401, easterly from Kingston, and over four lanes of Highway 2, easterly from Brockville. Electronically actuated levelling devices were used on some of the spreaders with promising results.

A new bridge over Johnstown Creek, east of Prescott on Highway 2, was completed and opened to traffic. Grading was completed on 4½ miles of Development Road 588, north of Foxboro, and followed by a hot mix paving contract. This completed the by-pass around Foxboro.

Work began on the replacement of a subsiding abutment on the bridge over the Moira River near Corbyville, in addition to grading on three miles of Highway 37.

A new bridge over Johnstown Creek was constructed and opened to traffic, replacing a weak and narrow structure. Four contracts were awarded and completed for seeding and mulching previous grading jobs; and several smaller contracts to improve patrol yards, intersections, drainage, and shoulders, rounded out a busy and productive construction season.

Maintenance

The additional two lanes of pavement on Highway 401 from Highway 38 to Marysville were completed this year thus providing four lanes from Gananoque to the western district limits at Trenton.



Model of "Quinte Skyway" now under construction near Deseronto. photo 1212D — (Kingston District)

In October, 1964, the Department of Highways fully assumed the ferry service between Kingston and Wolfe Island. The free service is provided by the "*M.V. Wolfe Islander*" a vessel of 145-foot length capable of handling 20 cars and 233 passengers.

Because of extremely record low water levels in Lake Ontario this year, considerable work was required to maintain service at both the Glenora-Adolphustown crossing on Highway 33, and the new Wolfe Island route. The docks on Highway 33 used by the "*M.V. Quinte Loyalist*" were lowered two feet this fall. Late in this fiscal year, work was commenced on the adjacent "*M.V. Quinte*" docks. On the route from Kingston to Wolfe Island the "*M.V. Wolfe Islander*" was unable to safely use the shallow channel to the federal dock on the island. A new temporary dock and 1.38 miles of road from Highway 96 to the dock were built with extreme urgency during the winter of 1964-1965, and service to Wolfe Island was maintained.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
401	Hwy. 38, westerly 9.72 mi.	0.45	1963	.....	0.45	1,752
401	Hwy. 41, easterly 9.70 mi.	0.32	1963	.....	0.32	2,190
401	Hwy. 41, westerly 9.99 mi.	1.67	1963	1.48	0.19	7,346
401	Service Centre, Kingston Twp., south side	0.59	1964	.....	0.59	1,872
401	Service Centre, Ernestown Twp., north side	0.50	1964	.....	0.50	1,427
2	Westbound passing lane, Cataraqui, westerly	0.21	1964	.....	0.21	799
2	Trenton, easterly	1.90	1964	.....	1.90	10,084
2	Intersection 2 and Lansdowne Rd.	0.11	1964	.....	0.11	447
2	Johnstown Creek bridge	0.38	1964	.....	0.34	1,652
2	Village of Maitland	0.19	1964	.....	0.19	570
2	Kayler's Creek bridge, east of Napanee	0.49	1962	.....	0.49	802
7 T.C.	Madoc to Jct. Hwy. 37	6.45	1963	5.16	1.29	13,693
7 T.C.	Madoc patrol yard	.....	1964	.....	.....	1,347
14	Stirling patrol yard	.....	1964	.....	.....	962
49	Hwy. 401 to Quinte Skyway	4.08	1963	.....	4.08	19,215
42	Beverley Creek at Delta	.....	1963	.....	.....	458
42	Forthton to Athens	4.64	1964	.....	3.79	8,060
43	Port Elmsley to Smiths Falls	5.06	1963	4.06	1.00	1,340
133	Camden east patrol yard	.....	1964	.....	.....	1,175
	Totals	27.13		10.70	15.54	75,191

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Miles Compl. 1964–65	Tons Placed 1964–65
401	Hwy. 16 to Trenton, Hwy. 33	123.8	123
2	Hwy. 16 to Trenton	106.8	117
7 T.C.	Hwy. 43 to Marmora	78.8	120
14	Hwy. 401 to Marmora	20.5	64
15	Hwy. 2 to Smiths Falls	55.5	62
29	Brockville to Smiths Falls	28.9	105
32	Gananoque to Hwy. 15	11.0	23
33	Kingston to Adolphustown ferry dock	30.0	35
33	Trenton to Stirling	13.8	44
37	Hwy. 401 to Hwy. 7	26.2	48

Bituminous Mulch and Cold Mix (Cont'd)

Hwy. No.	Location	Miles Compl. 1964-65	Tons Placed 1964-65
38	Hwy. 2 to Kingston-Portland Twp. line	43.0	57
41	Napanee to Hwy. 7	31.0	30
42	Westport to Hwy. 29	26.7	60
43	Perth to Port Elmsley	6.0	10
95	Horne's Point to Hwy. 96	7.2	36
96	Quebec Head to west end Concession 2	19.9	97
133	Hwy. 401 to Hwy. 2	2.0	6
137	Hwy. 401 to international boundary	1.4	9
Secondary Highways			
502	Napanee to Marysville	7.3	3
509	Hwy. 7 to Snow Road	12.1	10
	Totals	651.9	1,046

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
96	Wolfe Island	5	13,246	339
Secondary Highway				
509	Clarendon to Snow Road	6	17,151	310
	Totals	11	30,397	649

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
401	Cataraqui River to Joyceville sideroad	6.26	45,845
401	East of Hwy. 29, Ormand Street overpass	.....	50
2	Crystal Beach to Brockville	4.13	15,150
7 T.C.	Kaladar, westerly	7.85	27,495
29	South of Hwy. 401 interchange	.....	15
Var.	Eastern portion of district	.....	6,800
Var.	Western portion of district	.....	5,520
	Totals	18.24	100,875

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
38	Tichborne to Hinchinbrooke	5	20,490	1,000
95	Wolfe Island	8	16,268	740
	Totals	13	36,758	1,740

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Deseronto Road bridge, County Road 10	1963	1964	Rigid frame
401	County Road underpass, Richmond Bridge 5	1963	1964	Rigid frame
2	C.N.R. overhead at Marysville	1963	1964	Rigid frame
2	Johnstown Creek bridge	1964	1964	Rigid frame
42	Beverly Creek at Delta	1963	1964	Rigid frame
42	Glen Elbe Creek at Glen Elbe	1963	1964	Rigid frame

Concrete Base Pavement, Asphalt Top

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65	Pave. Width
401	Palace Road, Napanee east	.39	1963	.....	.39	324	10 Ft.
401	Hwy. 133 interchange	.99	1963	.....	.99	811	10 Ft.
401	Deseronto and Marysville interchanges	1.43	1963	0.33	1.10	982	10 Ft.
	Totals	2.81		0.33	2.48	2,117	

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Sq. Yds. Placed 1964–65	Pave. Width
401	From Hwy. 38, westerly	9.72	1963	9.72	133,580	24 Ft.
401	From Hwy. 41, Napanee, easterly	9.70	1963	9.70	134,600	24 Ft.
401	2 mi. west of Marysville to Hwy. 41	9.99	1963	9.99	131,205	24 Ft.
	Totals	29.41		29.41	399,385	

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
401	From Hwy. 38, westerly	9.70	251,298
401	From Hwy. 41, Napanee	9.72	205,407
401	2 mi. west of Marysville to Hwy. 41	9.99	205,811
401	Cataraqui River to Joyceville sideroad	6.26	47,372
401	Trenton patrol yard	.....	5,000
401	Service Centre, south side, Kingston Twp.	1.06	37,400
401	Service Centre, north side, Ernestown Twp.	0.50	37,400
401	Gananoque, easterly	0.32	880
2	Kayler's Creek bridge, east of Napanee	0.49	914
2	Cataraqui, westerly, passing lane	0.21	3,329
2	Trenton, easterly	1.90	37,730
2	Intersection 2 and Lansdowne County Road 3	0.11	4,110
2	Johnstown Creek bridge	0.38	6,350
2	Odessa to County Road 7	3.97	22,733
2	From Hwy. 401 Jct., easterly to Brockville	4.13	46,776
2	Village of Maitland	0.19	658
7 T.C.	Madoc to Jct. Hwy. 37	1.55	84,215
7 T.C.	Madoc patrol yard	100%	2,379
14	Stirling patrol yard	100%	2,127
29	South end of Hwy. 401 interchange	100%	92
37	Corbyville to Moira River	3.10	36,065
37	4 intersections, 3 mi. south and 4 mi. north of Tweed	100%	1,338
Old 38	Sydenham Road to new Hwy. 38	.....	58
38	At St. George's Lake Road	.....	187
49	Hwy. 401, southerly to Bay of Quinte	4.08	172,057
42	Hwy. 29, Forthton to village of Athens	4.33	134,750
42	Beverly Creek bridge at Delta	100%	395
42	Forthton to Athens	4.64	8,500
43	Port Elmsley to Smith Falls	2.42	2,887
96	Wolfe Island patrol yard	100%	26,003
133	Camden east patrol yard	100%	2,381
Secondary Highway 509	North of Clarendon	.....	5,006
	Totals	67.26	1,397,120

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
401	Hwy. 16 to Trenton, Hwy. 33	123.8	4,956
2	Hwy. 16 to Trenton	110.8	4,545
7 T.C.	Hwy. 43 to Marmora	78.8	3,126
14	Hwy. 401 to Marmora	20.5	631
15	Hwy. 2 to Smiths Falls	55.5	2,844
29	Brockville to Smiths Falls	28.9	666
32	Gananoque to Hwy. 15	11.0	400
33	Kingston to Adolphustown ferry dock	30.0	1,120
33	Trenton to Stirling	13.8	439
37	Hwy. 401 to Hwy. 7	26.2	344
38	Hwy. 2 to Kingston-Portland Twp. line	9.7	100
41	Napanee to Hwy. 7	30.6	350
42	Westport to Hwy. 29	26.7	655
43	Perth to Port Elmsley	6.0	137
95	Horne's Point to Hwy. 96	7.2	2,275
96	Quebec Head to west end Concession 2	20.0	2,072
96A	Hwy. 96 to Dawson's Point	1.4	4,080
133	Hwy. 401 to Hwy. 2	2.0	45
137	Hwy. 401 to international boundary	1.4	17
Secondary Highways			
502	Napanee to Marysville	7.3	374
509	Hwy. 7 to Snow Road	12.1	778
	Totals	623.7	29,954

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
401	Service Centre, Kingston Twp.	0.68	1964	.....	0.68
401	Service Centre, Earnestown Twp.	0.50	1964	.....	0.50
New 401	Gananoque, easterly	4.61	1964	.....	0.84
2	Cataraqui, westerly	0.21	1964	.....	0.21
2	Trenton, easterly	1.90	1964	.....	1.90
2	Odessa to County Road 7	3.97	1964	.....	3.97
2	Hwy. 401 to Brockville	4.13	1964	.....	4.13
7 T.C.	Madoc to Hwy. 37	6.45	1963	2.25	4.20
7 T.C.	Madoc patrol yard	.....	1963	.....	100%
14	Stirling patrol yard	.....	1964	.....	100%
37	Corbyville to Moira River	3.30	1964	.....	3.10
37	Actinolite southerly	6.45	1964	2.25	4.20
38	Village of Tichborne	0.05	1964	.....	0.05
49	Hwy. 401, southerly to Bay of Quinte	4.08	1963	0.35	3.73
42	Forthton to village of Athens	4.85	1963	0.52	4.33
43	Camden east patrol yard	.....	1964	.....	100%
96A	Hwy. 96 to Dawson's Point ferry dock	1.36	1964	.....	1.36
133	Millhaven to Hwy. 401	6.72	1964	.....	0.54
Secondary Highways					
509	Village of Mississippi to Snow Road	0.70	1964	.....	0.70
	Totals	49.96		5.37	34.44

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
401	Hwy. 38, westerly	9.72	1963	0.56	9.16	210,828
401	Hwy. 41, Napanee, easterly	9.70	1963	5.30	4.40	130,371
401	2 mi. west of Marysville to Hwy. 41, Napanee	9.99	1963	4.00	5.99	166,904
401	Service Centre, Kingston Twp.	0.68	1964		0.68	37,400
401	Service Centre, Ernestown Twp.	0.50	1964		0.50	37,275
New						
401	Gananoque to Hwy. 38	4.61	1964		0.32	880
2	Cataraqui, westerly	0.21	1964		0.21	3,329
2	Trenton, easterly	1.90	1964		1.90	37,730
2	Intersections 2 and Lansdowne County Road 3	0.11	1964		0.11	4,110
2	Odessa to County Road 7	3.97	1964		3.97	22,733
2	Village of Maitland	0.19	1964		0.19	658
2	Johnstown Creek bridge	0.38	1964		0.38	5,000
2	Hwy. 401, east to Brockville	4.13	1964		4.13	41,760
7 T.C.	Madoc to Hwy. 37	6.45	1963	2.25	4.20	84,220
7 T.C.	Madoc patrol yard		1964			2,379
14	Stirling patrol yard		1964			2,127
37	Corbyville to Moira River	3.30	1964		3.10	25,009
38	Actinolite, southerly		1964			1,338
Old						
38	Sydenham Road to Hwy. 38	1.45	1963	0.12	1.33	2,358
38	St. George's Lake Road		1963			187
49	Hwy. 401, southerly to the Quinte Skyway	4.08	1963		4.08	160,100
42	Forthton to Athens	4.85	1963	0.52	4.33	133,886
42	Beverly Creek bridge at Delta		1963			698
43	Port Elmsley to Smith Falls	5.06	1963	4.06	1.00	664
96	Wolfe Island		1964			26,003
96A	Hwy. 96 to Dawson's Point	1.36	1964		1.36	5,600
133	Camden east patrol yard		1964			2,381
Secondary Highway						
509	Village of Mississippi to Snow Rd.	0.70	1964		0.70	2,409
	Totals	73.34		16.81	52.04	1,148,337

Granular Base Where No Grading Done

Hwy. No.	Location	Work Begun	Tons Placed 1964–65
29	South of Hwy. 401	1964	92
38	Collins' Creek and Murvale Creek	1964	489
	Totals		581

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
2	Napanee patrol yard	Salt shed	1964	1964
14	Stirling patrol yard	Salt shed	1964	1964
29	Toledo patrol yard	Salt shed	1964	1964
38	Verona patrol yard	Salt shed	1964	1964
41	Erinsville patrol yard	Salt shed	1964	1964

Totals of Other Work Done

Items	Total Number	Total Tons	Total Miles
Bridges painted	12		
Calcium dust layer on gravel roads		1,710	72.31
Development roads built	1		4.5
Off-road parks maintained	9		
Roads snowploughed and kept open, King's highways			782.06
Roads snowploughed and kept open, secondary highways			22.27
Roadside picnic places maintained	64		
Routine maintenance, King's highways			782.06
Routine maintenance, secondary highways			22.27
Salt for de-icing roads (raw)		14,072	
Salt in sand, stockpiled		2,619	
Sand for winter maintenance		49,984	
Scale houses maintained	4		
Seeding by department's forces (acres)	395.41		
Shrubs received and planted this year	12,652		
Signs erected or replaced	2,892		
Snow fence erected, dismantled, stored			31.46
Weed control (gals.)	1,303		991.5
Zone painting on King's highways (gals.)	111,492.44		1,002.8
Zone painting on secondary highways (gals.)	1,273.56		13.0

April 1st, 1964, to March 31st, 1965

FERRY "QUINTE"						FERRY "LOYALIST"						TOTALS		
												Both Ferries 1964–65		
Month	Days Worked	Trips	Cars	Trucks	Total	Month	Days Worked	Trips	Cars	Trucks	Total	Cars	Trucks	Totals
April	24	517	4,678	303	4,981	April	24	818	10,164	703	10,867	14,842	1,006	15,848
May	31	1,267	10,481	413	10,894	May	31	1,003	11,833	688	12,521	22,314	1,101	23,415
June	30	1,358	12,367	528	12,895	June	30	999	11,448	861	12,309	23,815	1,389	25,204
July	31	1,469	19,770	529	20,299	July	31	1,077	19,107	871	19,978	38,877	1,400	40,277
August	31	1,478	19,940	443	20,383	August	31	1,083	20,164	801	20,965	40,104	1,244	41,348
September	30	1,348	12,770	491	13,261	September	30	974	11,827	747	12,574	24,597	1,238	25,835
October	31	1,364	10,865	486	11,351	October	31	968	9,255	722	9,977	20,120	1,208	21,328
November	30	1,256	7,893	238	8,131	November	30	950	6,868	554	7,422	14,761	792	15,553
December	30	1,135	10,377	8	10,385	December	8	230	1,988	91	2,079	12,365	99	12,464
January	Not operating					January	31	1,279	10,598	587	11,185	10,598	587	11,185
February	Breaking ice					February	28	1,168	9,772	602	10,374	9,772	602	10,374
March	Breaking ice					March	31	1,353	14,139	879	15,018	14,139	879	15,018
Totals	268	11,192	109,141	3,439	112,580	Totals	336	11,902	137,163	8,106	145,269	246,304	11,545	257,849

"QUINTE"

Peak Traffic: July 5, 1964

Trips	58
Cars	1,005
Trucks	5
Total days worked	268
Total trips	11,192
Total cars carried	109,141
Total trucks carried	3,439

"LOYALIST"

Peak Traffic: August 2, 1965

Trips	43
Cars	1,062
Trucks	17
Total days worked	336
Total trips	11,902
Total cars carried	13,763
Total trucks carried	8,106

October 19, 1964, to March 31, 1965

FERRY: "WOLFE ISLANDER"

Month	Days Worked	Trips	Cars	Trucks	Pedestrian	Total
October	13	157	2,701	838	5,694	9,233
November	30	362	7,050	674	9,889	17,616
December	30	350	5,665	385	8,523	14,573
January	28	284	3,772	367	5,761	9,900
February	24	210	1,911	269	1,738	3,918
March	31	317	5,262	363	4,663	10,288
Total	156	1,318	26,361	2,896	36,271	65,528

Peak Traffic: January 4, 1965

Trips	12
Cars	207
Trucks	23
Pedestrians	414

Total days worked	156
Total trips	1,318
Total cars	26,361
Total trucks	2,896
Total pedestrians	36,271

DISTRICT No. 9 — OTTAWA

L. E. Walker, P.Eng., District Engineer

Construction

Ottawa Queensway Highway 17 T.C.H.

During the 1964 construction season work was carried out over a distance of 4.15 miles. Concrete paving was laid from Carling Avenue to O'Connor Street (3.4 miles) and was opened to traffic. Earth grading, drainage and structures from Elgin to Hurdman Road railway yard, 0.75 miles. This included a structure over the Rideau Canal which will be completed in July, 1965, and Main Street structure which was completed in 1964. The north-east and north-west quadrants of the Alta Vista Drive interchange were also completed. The Queensway is now opened from the west city limits to O'Connor Street.

Approaches to Macdonald-Cartier Bridge over the Ottawa River

Earth grading, drainage and granular base, concrete and hot mix pavement was started June, 1964, and will be completed by July, 1965. This will give traffic using the Macdonald-Cartier bridge access to King Edward Avenue and Sussex Drive, which will be the main traffic routes on the Ontario side of the bridge.

Highway 17 West Carp By-pass

The grading of the 9.27 miles of new right-of-way was completed September, 1964, which will eliminate approximately 12 miles of old Highway 17, which has poor



Aerial view of Ottawa Queensway construction between O'Connor Street and Bronson Avenue. photo 5252 — (Ottawa District)

alignment and visibility. This portion will be poured and paved and opened to traffic in the fall of 1965.

Highway 16 Manotick By-pass

The hot mix wearing surface was placed 4.4 miles and the channelization of two main intersections was improved. A curve revision was constructed 5.5 miles south of North Gower to eliminate poor alignment. An entrance into the provincial park was improved.

Highways 7 and 15

The channelization of old Highway 15 and Highways 7 and 15 at Stittsville was improved.

Highway 401

Concrete paving of the westbound lane from Toll Gate Road to one mile east of Lancaster was completed and opened to traffic July 31, a distance of 13.82 miles. Concrete paving of a four-lane section of Highway 401 from one mile east of Lancaster to Quebec boundary was completed and opened to traffic November 10, a distance of 8.3 miles. Included in these paving jobs were four interchanges. Grading of westbound lane from Highway 16 to Iroquois was completed, a distance of 10.96 miles. The concrete paving of this section was awarded and will be completed in the fall of 1965. The grading of the westbound lane from Iroquois to nine miles east of Morrisburg was awarded and will be completed in the spring of 1966. Eleven bridges were completed on Highway 401 last year.

Highway 31

An asphalt sand pad was laid from Williamsburg to Highway 43; also shouldering was improved; this was a distance of 7.98 miles.

MAINTENANCE

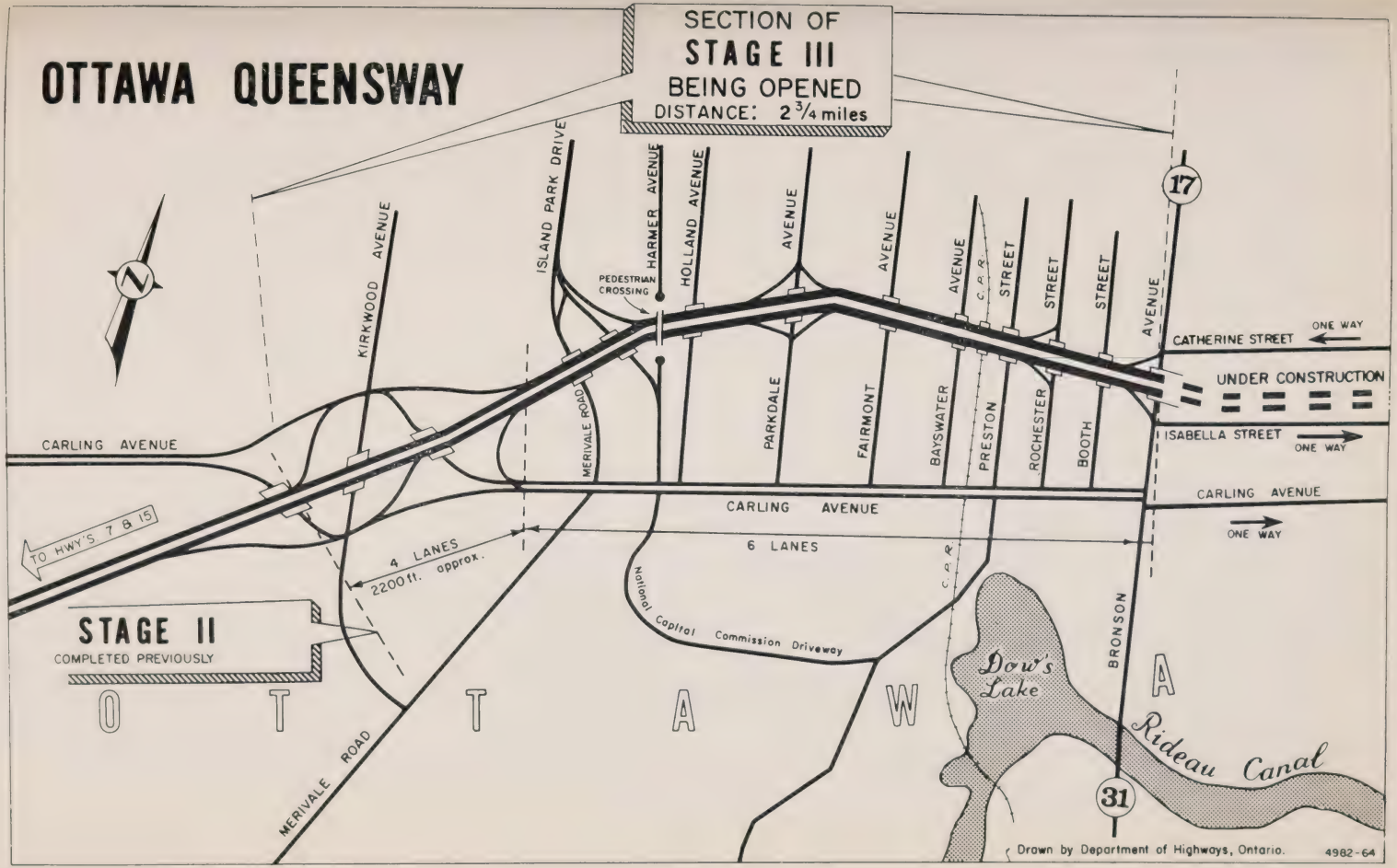
A nine-mile section of four-lane Highway 401 from Quebec border westerly was opened to traffic in November and the westbound lanes of Highway 401 from Lancaster to Cornwall, approximately 15 miles, was opened to traffic in July.

Development was started on two new patrol yards, Calabogie and Carp. Standard salt sheds were erected at Carp, Calabogie and Lancaster.

An erosion problem at the downstream end of a concrete box culvert under Highway 17 T.C. east of Ottawa along the Ottawa River was overcome successfully by using Maccaferri gabions. This was the first time they had been used in Ottawa district.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
16	Curve revision, 5 mi. south of North Gower	0.78	1964	0.78	796.00
16	Intersection improvement at Manotick	.....	1964	.....	1,451.00
7	Channelization at Hwy. 7 and Stittsville Rd.	0.38	1964	0.38	3,014.00
401	Toll Gate Road to 1 mi. east of Lancaster	.....	1962	.....	13,674.58
401	1 mi. east of Lancaster, easterly 4.4 mi.	4.4	1963	4.4	14,796.81
401	5.4 mi. east of Lancaster, easterly to Quebec Boundary	3.63	1964	3.63	13,629.32
Q'way	Carling Avenue to O'Connor Street	3.40	1962	3.40	15,679.34
Q'way	Elgin Street to Main Street	.....	1963	.....	3,577.00
Q'way	Alta Vista interchange	.....	1964	.....	2,119.48
Q'way	Rideau River to St. Laurent Blvd.	.....	1964	.....	10,960.76
	Totals	12.59		12.59	79,698.29


OTTAWA QUEENSWAY
SECTION OF
STAGE III
BEING OPENED
DISTANCE: 2 3/4 miles
KIRKWOOD AVENUE
ISLAND PARK DRIVE
HARMER AVENUE
HOLLAND AVENUE
AVENUE
AVENUE
AVENUE
STREET
STREET
STREET
AVENUE
17
PEDESTRIAN CROSSING
C.P.R.
CATHERINE STREET
ONE WAY
UNDER CONSTRUCTION
ISABELLA STREET
ONE WAY
CARLING AVENUE
ONE WAY
CARLING AVENUE
MERIVALE ROAD
PARKDALE
FAIRMONT
BAYSWATER
PRESTON
ROCHESTER
BOOTH
CARLING AVENUE
TO HWY'S 7 8 15
4 LANES
2200ft. approx.
6 LANES
STAGE II
COMPLETED PREVIOUSLY
National Capital Commission Driveway
C.P.R.
BRONSON
Dow's Lake
Rideau Canal
31
MERIVALE ROAD
O T T A W A
Drawn by Department of Highways, Ontario.
4982-64

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
17	Chute-A-Blondeau to Hwy. 17 T.C.	1.7	6,400	240
511	Brightside to Calabogie	5.1	15,700	500
508	Burnstown for 1 mi. westerly	1.0	3,100	100
	Totals	7.80	25,200	840

Bituminous Resurfacing of Old Pavement

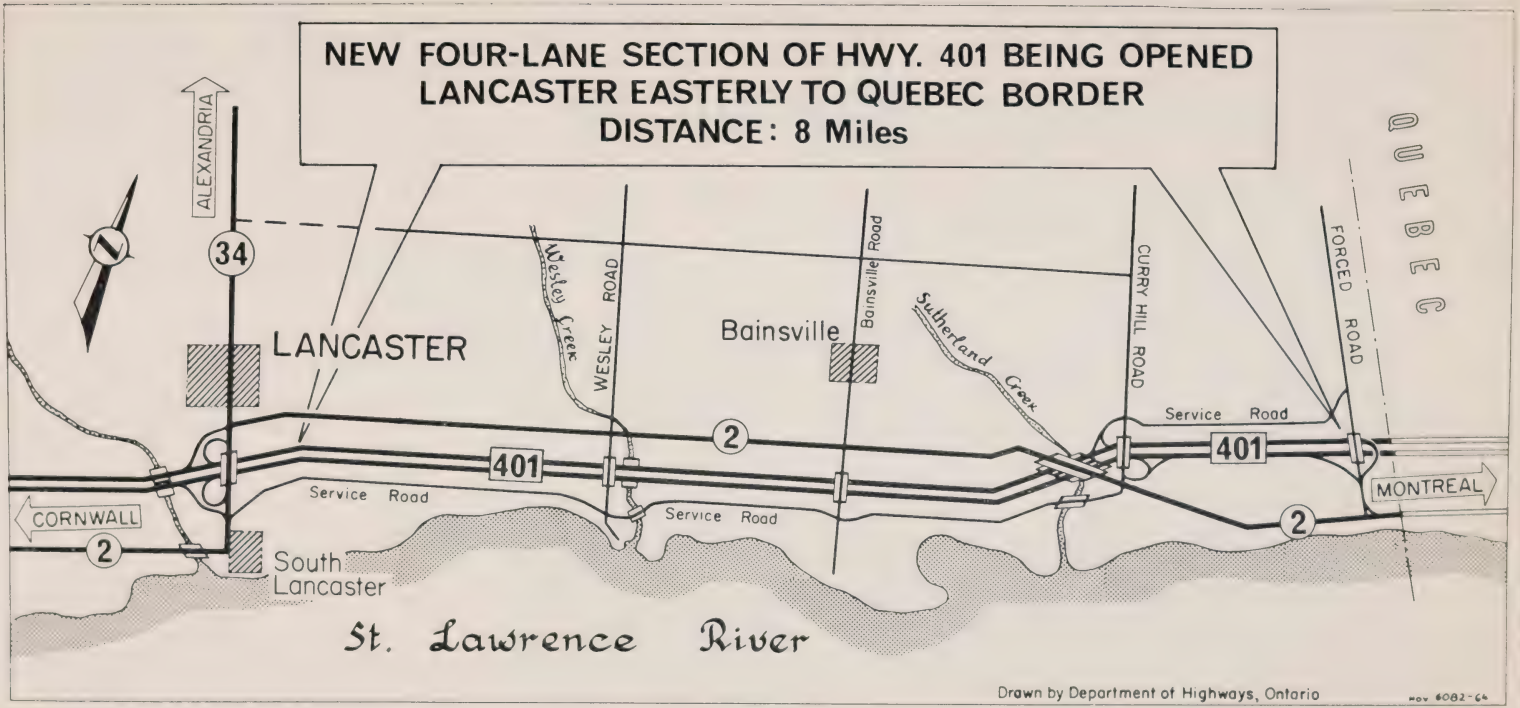
Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
16	Manotick diversion	4.42	15,167.77
31	Williamsburg, northerly to south Jct. Hwy. 43	7.98	3,898.93
	Totals	12.40	19,066.70

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
401	Cardinal County Road 22	1963	1964	Reinforced concrete
401	County Road to Iroquois	1963	1964	Reinforced concrete
401	Westerly Road underpass	1963	1964	Precast beams
401	Bainsville Road underpass	1963	1964	Precast beams
401	Curry Hill Road underpass	1964	1964	Precast beams
401	0.2 mi. west Quebec Boundary	1963	1964	Reinforced concrete
Q'way	Main Street	1963	1964	Reinforced concrete

Concrete Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Sq. Yds. Placed 1964–65	Pave. Width
401	Toll Gate Road to 1 mi. east of Lancaster	13.82	1962	7.00	6.82	112,220.05	24 Ft.
401	1 mi. east of Lancaster, easterly 4.4 mi.	4.4	1963	.....	4.4	127,356.53	24 Ft.
401	5.4 mi. east of Lancaster, easterly to Quebec Boundary	3.63	1964	.....	3.63	105,649.19	24 Ft.
Q'way	Carling Avenue to O'Connor Street	3.40	1963	2.60	.80	37,932.39	36 Ft.
	Totals	25.25		9.60	15.65	383,158.16	


NEW FOUR-LANE SECTION OF HWY. 401 BEING OPENED
LANCASTER EASTERLY TO QUEBEC BORDER
DISTANCE: 8 Miles
ALEXANDRIA
34
LANCASTER
Wesley Creek
WESLEY ROAD
Bainsville
Bainsville Road
Sutherland Creek
CURRY HILL ROAD
FORCED ROAD
QUEBEC
Service Road
401
2
CORNWALL
MONTREAL
South Lancaster
St. Lawrence River
Drawn by Department of Highways, Ontario

Crushed Gravel and Stone on Roads by Contract

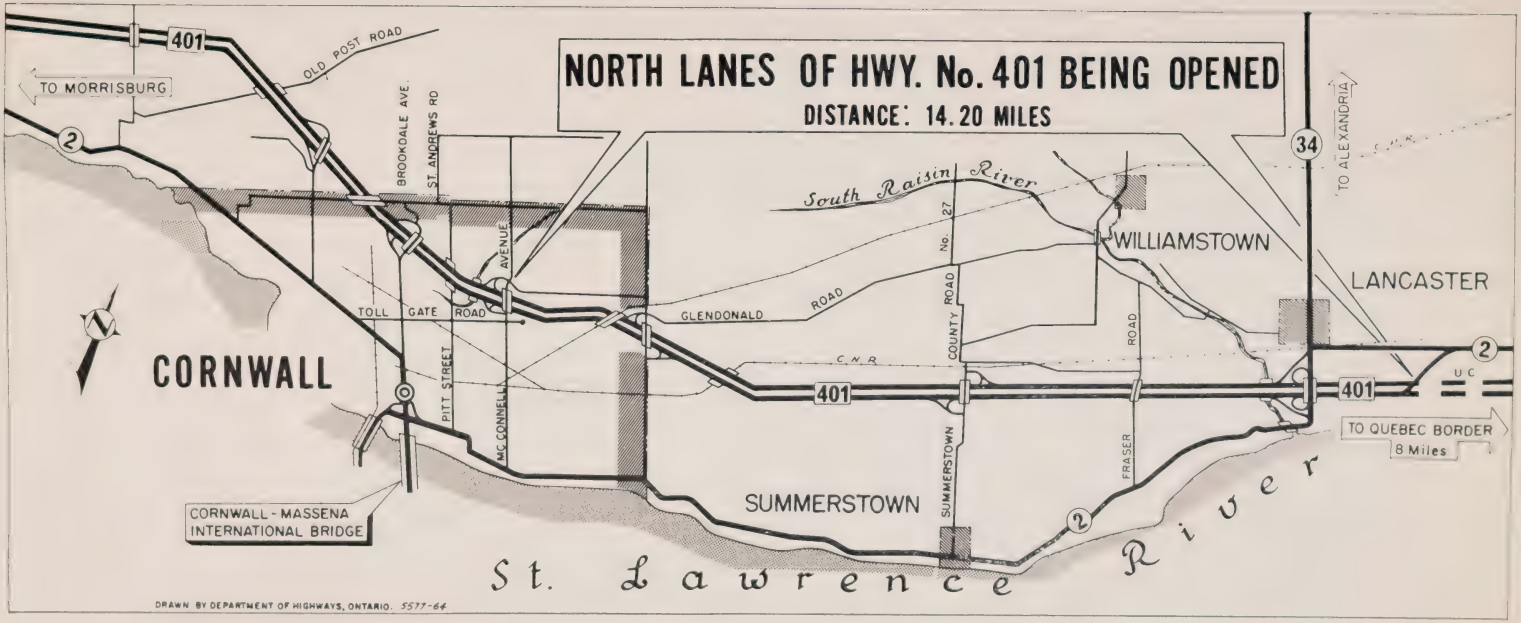
Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
7	Channelization Hwy. 7 and Stittsville Road	0.38	4,044.00
16	Intersection improvement at Manotick	4.42	11,081.39
17	Hwy. 44 to Antrim	9.27	31,061.49
17	Alfred, easterly 1.10 mi.	1.10	307.00
17	Jct. Hwy. 34, easterly 5.0 mi.	5.00	12,507.30
17	Hawkesbury patrol yard	.....	9,001.23
31	Williamsburg, northerly to south Jct. Hwy. 43	7.98	12,514.29
43	Merrickville patrol yard	.....	4,996.64
401	Hwy. 16 to Cardinal	5.33	20,222.77
401	Cardinal to Iroquois	4.90	16,000.61
401	1 mi. east of Lancaster, easterly 4.4 mi.	4.40	152,171.96
401	5.4 mi. east of Lancaster, easterly to Quebec boundary	3.63	107,123.26
Q'way	Elgin Street to Main Street	.25	9,020.00
Q'way	Main Street, easterly 0.49 mi.	0.49	720.00
Q'way	Alta Vista interchange	.....	8,555.24
508	Various locations	.....	10,986.24
	Totals	47.15	410,313.42

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
17 T.C.	Various locations, Quebec border to Pembroke	172	7,215
34	Various locations, Hawkesbury to Lancaster	39	660
43	Various locations, Alexandria to Smith Falls	81	2,634
2	Various locations, Quebec border to Johnstown	71	1,263
401	Various locations, Quebec border to Johnstown	64	2,041
31	Various locations, Ottawa to Morrisburg	48	1,311
16	Various locations, Ottawa to Johnstown	58	3,744
7	Various locations, Ottawa to Perth	58	1,216
29	Various locations, Arnprior to Carleton Place	27	150
44	Various locations, Almonte to Carp	13	106
508	Various locations, Burnstown to Black Donald	23	709
511	Various locations, Brightside to Calabogie	20	1,786
	Totals	674	22,835

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
7	Hwy. 7 and Stittsville Road	0.38	1964	.....	0.38
16	Curve revision, 5 mi. south of North Gower	0.78	1964	.....	0.78
16	Intersection improvement at Manotick	0.10	1964	.....	0.10
17	Hwy. 44 to Antrim	9.27	1963	5.00	4.27
401	Hwy. 16 to Cardinal County Road	5.33	1963	2.00	3.33
401	Cardinal County Road to Iroquois	4.90	1963	2.00	2.90
Q'way	Elgin Street to Main Street	0.20	1963	0.10	0.10
Q'way	Main Street, easterly 0.49 mi.	0.49	1964	.....	0.29
	Totals	21.45		9.10	12.15


NORTH LANES OF HWY. No. 401 BEING OPENED
DISTANCE: 14.20 MILES
401
TO MORRISBURG
OLD POST ROAD
BROOKDALE AVE.
ST ANDREWS RD
AVENUE
TOLL GATE ROAD
PITT STREET
MC CONNELL
GLENDONALD ROAD
C.N.R.
South Raisin River
No. 27
COUNTY ROAD
WILLIAMSTOWN
ROAD
34
TO ALEXANDRIA
LANCASTER
U.C.
TO QUEBEC BORDER
8 Miles
CORNWALL
CORNWALL - MASSENA
INTERNATIONAL BRIDGE
SUMMERSTOWN
FRASER
St. Lawrence River
DRAWN BY DEPARTMENT OF HIGHWAYS, ONTARIO. 5577-64

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
7	Intersection Hwy. 7 and Stittsville Road	0.38	1964	.....	0.38	4,044.00
16	Curve revision, 5 mi. south of North Gower	0.78	1964	.....	0.78	11,554.11
16	Intersection improvement at Manotick	0.10	1964	.....	0.10	8,813.95
17	Hwy. 44 to Antrim	9.27	1963	.....	9.27	31,061.49
401	Hwy. 16, easterly to County Road to Iroquois	10.96	1964	.....	5.00	148,779.38
401	1 mi. east of Lancaster, easterly 4.4 mi.	4.40	1963	3.00	1.40	91,103.95
401	5.4 mi. east of Lancaster, easterly to Quebec boundary	3.63	1964	.....	3.63	85,276.07
Q'way	Carling Avenue easterly to O'Connor	3.40	1963	2.60	0.80	25,478.89
Q'way	Elgin Street to Main Street	0.25	1963	.....	0.10	9,020.00
Q'way	Alta Vista interchange	.....	1964	.....	.....	8,555.24
	Totals	33.17		5.60	21.46	423,687.08

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
	Lancaster patrol yard	Salt shed	1964	1964
	Lancaster patrol yard	Patrol office	1964	1964
44	Carp patrol yard new site, 2 units	Salt shed	1964	1965
401	Long Sault patrol yard, new site	Salt shed	1964	1964
508	Calabogie patrol yard, new site	Patrol office	1964	1965

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	5	.....	.....
Off-road parks maintained	8	.....	.....
Roads snowploughed and kept open, King's highways	.....	.....	715
Roads snowploughed and kept open, secondary highways	.....	.....	43
Roadside picnic places maintained	46	.....	.....
Routine maintenance, King's highways	.....	.....	715
Routine maintenance, secondary highways	.....	.....	43
Salt for de-icing roads (raw)	.....	20,900	.....
Salt in sand, stockpiled	.....	1,122	.....
Sand for winter maintenance	.....	35,766	.....
Scale houses maintained	1	.....	.....
Seeding by department's forces (gals.)	365A	.....	.....
Shrubs received and planted this year	6,160	.....	.....
Signs erected or replaced	8,198	.....	.....
Weed control	.....	.....	438M
Zone painting on King's highways (gals.)	11,130	.....	.....
Zone painting on secondary highways (gals.)	270	.....	.....

DISTRICT No. 10 — BANCROFT

J. E. Callaghan, P.Eng., District Engineer

Construction

Grading of Highway No. 62 from Killaloe northerly 4.1 miles was completed in the fall. Grading of Highway No. 41 from Griffith southerly was nearly completed before winter. Grading work was started on Highway No. 60 from Algonquin Park station easterly, 8.9 miles, on Highway No. 62 southerly from the junction of Highway No. 620 for 4.5 miles and on Secondary Highway No. 500 from Hermon westerly.

Paving of Highway No. 60 from Wilno to Killaloe and Highway No. 62 from Pembroke westerly 4.6 miles, was completed during the late summer.

Maintenance

During the summer and winter, day labour construction was carried out on the following highways, No. 41, 506, 512, 515 and 620.

During the year, construction was completed on a new four-bay metal patrol garage at Ormsby.

Approximately 20 miles of highway were surface treated with limestone chips.

Bituminous prime dust layer was applied to approximately 103 miles of secondary highway.

Zone painting was completed over approximately 478 miles.

More than 275,880 square yards of right-of-way were seeded.

Approximately 221 miles of right-of-way were sprayed with weed and brush chemicals.

Bituminous Hot Mixed Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
60	Wilno to Killaloe	7.05	1964	7.05	13,120
62, 41	Jct. Hwys. 62 and 41 at Pembroke, 5 mi. westerly on Hwy. 62 and .58 mi. on Hwy. 41	5.58	1964	5.58	11,370
	Totals	12.63		12.63	24,490

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
62	Killaloe to 3 mi. north	3.0	10,298	300
500	Bancroft, easterly 9.0 mi.	9.0	8,969	400
500	McArthur's Mills to Denbigh	21.5	79,153	1,650
504	Apsley to Glen Alda	15.0	18,186	1,400
506	3 mi. east of Hwy. 41 to Plevna	19.0	53,925	2,000
513	Hwy. 132 to 1.05 mi. east of Caldwell	10.0	24,976	960
515	5 mi. south of Combermere, southerly 2 mi.	2.0	4,137	255
517	Combermere to Carlow Twp. line	10.0	26,000	870
523	6 mi. south of Madawaska to Wicklow Twp. line	7.0	14,500	600
620	3 mi. east of Apsley to 4 mi. west of Glen Alda	7.0	20,150	810
	Totals	103.5	260,294	9,245

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
515	Quadville, northerly 10.0 mi.	10.0	26,835	1,328.26
517	Combermere, southerly 1.0 mi.	1.0	2,800	20.78
523	Madawaska, southerly 6.5 mi.	6.5	15,921	955.40
620	Glen Alda, 1.5 mi. east and 1.0 mi. west	2.5	7,424	406.53
	Totals	20.0	52,980	2,710.97

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
41	Hyde's Creek bridge	1964	1964	Concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
41	Griffith, southerly	5.59	33,890
60	Wilno to Killaloe	7.05	13,450
62	Pembroke, westerly	5.58	13,800
62	Vicinity of Alice	4.92	48,626
62	Killaloe, northerly	4.06	37,067
500	McArthur's Mills to Denbigh	22.00	30,000
515	Combermere to 1.9 mi. south	1.90	13,000
620	Vicinity of Bott's Lake	1.50	6,200
28	Bancroft patrol yard (maintenance)	.....	10,000
	Totals	52.60	206,042

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
41	Shady Nook, northerly	2.0	4,000

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
41	Griffith, southerly	5.59	1964	....	5.59
60	From Algonquin Park station road, easterly 8.91 mi.	8.91	1964	....	3.12
62	Vicinity of Alice	4.92	1964	....	4.92
62	Killaloe, northerly	4.06	1964	....	4.06
62	Jct. Hwy. 620, southerly	4.50	1964	....	.68
500	Hermon, westerly	1.90	1964	....	1.00
506	Plevna, westerly	.50	1964	....	.50
512	1.5 mi. north of Brudenell	1.50	1964	....	.50
515	Combermere, southerly	1.00	1964	....	1.00
620	Vicinity of Bott's Lake	.50	1963	.25	.25
620	½ mi. east of Coe Hill	.50	1964	....	.25
	Totals	33.88		.25	21.87

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
41	Griffith, southerly	5.59	1964	5.59	169,600
60	From Algonquin Park station road, easterly	8.91	1964	3.12	49,500
62	5 mi. west of Pembroke, westerly	4.92	1964	4.92	163,800
62	Killaloe, northerly	4.06	1964	4.06	82,950
62	Jct. Hwy. 620, southerly	4.50	1964	.68	11,949
500	Hermon, westerly	1.90	1964	1.00	13,868
515	Combermere, southerly	1.90	1964	1.90	13,315
620	Vicinity of Bott's Lake	.50	1964	.50	3,200
	Totals	32.28		21.77	508,182

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
500	McArthur's Mills to Denbigh	22.0	1964	22.0	30,000

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
62	Ormsby patrol yard	4-bay metal patrol garage	1963	1964
62	Ormsby patrol yard	Tool shed	1964	1964
60	Whitney patrol yard	Tool shed	1964	1964
28	Bancroft patrol yard	Tool shed	1964	1964
62	Maynooth patrol yard	Tool shed	1964	1964
60	Barry's Bay patrol yard	Salt shed	1964	1965
28	Aspley patrol yard	Tool shed	1964	1964
41	Eganville patrol yard	Tool shed	1964	1964
41	Cloyne patrol yard	Tool shed	1964	1964

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads		.....	289.55	.....
Development roads built		.....	.....	14
Off-road parks maintained		24	.....	.....
Roads snowploughed and kept open, King's highways		.....	.....	411.94
Roads snowploughed and kept open, secondary highways		.....	.....	194.15
Roadside picnic places maintained		2	.....	.....
Routine maintenance, King's highways		.....	.....	411.94
Routine maintenance, secondary highways		.....	.....	194.15
Salt for de-icing roads		.....	5,308	
Salt in sand, stockpiled		.....	1,746	
Sand for winter maintenance		.....	43,560	
Scale houses maintained		2		
Seeding by department's forces	(acres)	57		
Shrubs received and planted this year		2,500		
Signs erected or replaced		2,342	.....	
Snow fence erected, dismantled, stored		.....	.....	20
Weed control		.....	.....	254
Zone painting on King's highways	(gals.)	8,253		
Zone painting on secondary highways	(gals.)	1,575		

DISTRICT No. 11 — HUNTSVILLE

E. H. Jones, P.Eng., District Engineer

Construction

During the year, grading, granular base and hot mix paving was completed on Highways 35 and 60 from Hillside to Dwight, a distance of 5.5 miles. This completes the reconstruction of Highways 35 and 60 to Dwight and Highway 60 through Algonquin Park to the district boundary.

On Highway 11 north from Orillia, the work of widening to four lanes was continued for 4.98 miles and all commercial entrances and public road intersections were constructed to a standard using concrete curb, gutter and islands. Also a new contract was awarded to carry on a similar widening program as far as the village of Severn Bridge. This contract includes the widening of three structures to a roadway width of 52 feet to accommodate the four lanes of pavement. These structures carry the traffic over the Trent Valley Canal, Canadian National Railway and the west branch of the Severn River.

With the completion of a new high-level structure and approaches over the Narrows at Atherley on Highway 12, the old swing bridge was eliminated thus allowing an uninterrupted flow of traffic on the highway and on the Trent Valley waterway.

At the Hog River on Highway 12, at the limits of the village of Victoria Harbour, an old structure was replaced by a reinforced concrete bridge. The alignment and approaches were also improved during the grading operations.

On Highway 69 in the town of Bala, work was begun on grading, hot mix paving, structures and connecting roads, to bypass the main thoroughfare of the town and eliminate the bottleneck and traffic lights caused by a single lane structure over the



Hwy. 118 — 3 miles west of Baysville. photo 6020 — (Huntsville District)

Moon River. This contract also includes a new Canadian Pacific Railway underpass and a new structure over the Moon River.

An extensive program of construction by day labour forces has again been carried out by the district. This work consisted of pre-contract clearing, curve revisions, and reconstruction of sections of highway to approved alignment and grade. The labour was hired in the locality of the project and relieved unemployment in many areas. Equipment was obtained by tender at hourly rates.

The following highways were involved: 35, 118, 124, 518, 530, 532 and 632.

MAINTENANCE

Continuous snow storms over long periods and numerous freezing rain storms combined to give the Huntsville District one of the most severe winters it has experienced in 25 years. The quantity of winter sand used was 98 000 tons compared with 93,185 tons in the previous year. Salt used was 11,100 tons compared with 9,210 tons in the previous year.

Front end loaders for winter maintenance operations were rented on a monthly basis with operators at 13 locations, and considerable savings were effected. D.H.O. Equipment Rentals recorded a credit of $52,788.00 compared with $29,320.00 for the previous year. The increase in mileage of surface primed in 1964 was due to priming of the nine miles of Highway 518 assumed during the previous year. Mulch surfacing decreased by 1.4 miles and surface treatment increased by 4.1 miles over the previous year.

The bridge maintenance gang has continued its program of inspection, repair and maintenance. It is noted that bridge sidewalks and curbs treated with linseed oil - kerosene mixture two years ago, have withstood very well the freeze thaw action of two winters.

Patrol yard development is continuing. A new yard development was completed at Orrville.

New buildings constructed at patrol locations by district forces were three standard salt sheds and three temporary patrol offices.

The district electrical crew continued to provide service to the adjacent districts.

Zone painting increased from 17,500 gallons for 693 miles in 1963 to 18,600 gallons for 813 miles in 1964.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
520	C.N.R.	District of Parry Sound, Burton Twp., Lot 9, Concession 1, or at railway mileage 25.07, Sudbury sub-division	Flash. lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Totals Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
11	From 1.5 mi. north of Hwy. 11B, north to Sparrow Lake Road	4.98	1964	4.98	50,664
12	Hog River bridge, Victoria Harbour	0.50	1964	0.50	869
12T.C.	From east end of south Orillia by-pass and Atherley Narrows bridge	1.40	1963	1.40	7,449
35, 60	Hillside, east to Dwight	5.50	1964	5.50	12,987
	Totals	12.38		12.38	71,969

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1964–65	Tons Placed 1964–65
69	Intersection with Moon River Road	0.4	0.4	660
118	Dorset-Baysville (sections)	1.0	1.0	1,650
118	From 2.4 to 3.7 mi. east of Jct. Hwy. 11	1.3	1.3	2,145
124	From 4.1 to 4.9 mi. east of Hwy. 69	0.8	0.8	1,320
124	Jct. of Old and New Hwy. 124, east of Dunchurch	0.4	0.4	660
124	From 0.2 to 0.4 mi. north east of Magnetawan River at Knoefli Falls	0.4	0.4	660
124	From 0.57 to 1.07 mi. west of Secondary Road 520	0.6	0.6	990
520	Burk's Falls, Magnetawan (sections)	2.0	2.0	3,300
520	From Jct. Hwy. 11, westerly for ¼ mi.	0.3	0.3	495
520	From Jct. Hwy. 124, southerly to Magnetawan	1.8	1.8	2,970
527	Huntsville-Baysville (sections)	0.5	0.5	825
530	From Jct. Hwy. 35 at Carnarvon, easterly 6 mi.	6.0	6.0	9,900
532	Bent River-Rosseau (sections)	2.5	2.5	4,125
532	From 5.4 to 6.4 mi. west of Rosseau	1.2	1.2	1,980
532	0.1 mi. north of south Jct. Hwys. 516 and 532	0.3	0.3	495
532	Fry Hill (diversion)	0.8	0.8	1,320
592	Elmsdale, south Jct. Hwy. 11	0.5	0.5	825
	Totals	20.8	20.8	34,320

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
124	5 mi. east of McKellar and 2 mi. west of Jct. Hwys 510 and 124 (sections)	12.0	24,800	780
507	From Jct. Hwy. 503, southerly for 5.0 mi.	5.0	15,076	375
514	From Jct. Hwy. 35, northerly to Interlaken	10.0	22,890	750
518	Jct. Hwy. 69 to Orrville	7.0	17,950	505
518	Sprucedale to Bear Lake	12.0	27,800	830
518	Kearney to Sand Lake	9.8	25,970	735
519	From Jct. Hwys. 519 and 121, south	16.5	40,764	1,233
520	Dunchurch to Ardbeg	16.5	40,725	1,150
520	Magnetawan to Jct. Hwy. 124	1.9	5,035	140
529	Hwy. 529 to Bayfield Inlet	2.8	7,420	210
530	From Jct. Hwy. 35 to Jct. Hwy. 519	12.0	37,302	900
532	Whitefish Lake to Shadow River	1.5	3,975	100
644	Pointe-Au-Baril, westerly	0.5	1,350	25
	Totals	96.70	271,057	7,733

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
518	From Hwy. 69 to Orrville	5.0	13,060	827
532	From Patterson's Corners to Bent River	5.0	13,750	650
559	From south Jct. Hwys. 69 and 559 to 9.9 mi. north	9.9	27,225	1,287
612	From Hwy. 103 to Hwy. 69	7.0	19,250	910
632	From Rosseau to Port Carling (sections)	8.0	22,000	1,040
	Totals	34.9	95,285	4,714

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
12	Hog River bridge, village of Victoria Har.	1964	1964	Reinforced concrete
12T.C.	Atherley Narrows structure	1963	1964	Reinforced concrete, prestressed concrete beams
Development Road				
709	Machar Lake bridge (Eagle Lake)	1964	1964	Reinforced concrete

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11	From 1.5 mi. north of Hwy. 11B, north to Sparrow Lake Road	4.98	71,240
12	Hog River bridge (Victoria Harbour)	0.28	4,413
12T.C.	From east end South Orillia by-pass 1¼ mi and Atherly Narrows bridge	1.40	17,331
35, 60	Jct. Hwy. 11B, easterly to Hillside	7.87	392
35, 60	Hillside, easterly to Dwight	5.50	31,722
69	From Moon River, Bala, north channel, south 0.25 mi. and C.P.R. subway	0.25	4,341
69	3.2 mi. west of Gravenhurst, west limits	3.20	2,997
118, 527	Various locations, D.H.O. yard, Baysville, 5.1 mi. north of Baysville, 10.8 mi. east of Baysville	.....	9,994
124	2.3 mi. west of east Jct. Hwy. 124 and Secondary Hwy. 520		8,704
124	2 mi. east of west Jct. Hwys. 124 and 520	1.20	11,301
124	2.5 mi. west of McKellar	1.50	14,490
124	3 mi. east of Hwy. 69	3.00	692
124, 520	Various locations, Hwy. 124 and Secondary Hwy. 520, east and west Dunchurch	.....	493
503	From Norland to 3 mi. east of Norland	3.00	20
503	2 mi. east of Kinmount, 2 mi. west of Irondale	2.50	7,990
518	Jct. Hwys. 69 and 520 east of Orrville	0.10	490
530	East of Jct. Hwy. 35 and Secondary Hwy. 530	4.50	19,987
532	East of Jct. Hwys. 69 and 532	2.00	9,990
532	1.9 mi. east of Jct. Hwys. 532 and 632	2.00	10,992
532	0.6 and 8.1 mi. east of Rosseau	1.90	9,992
680 (Dev. Rd.)	Dillonport Road to Killbear Provincial Park gate	5.55	76,534
709 (Dev. Rd.)	Machar Lake bridge, approx. 7 mi. west of South River	0.40	3,238
	Totals	49.13	317,393

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11	Jct. Hwy. 93 to 4.0 mi. north of Burk's Falls	105.3	12,260
12 T.C.	Atherly Narrows, Midland	35.2	426
35	Jct. Hwy. 11B (Huntsville) to Haliburton-Victoria boundary	75.0	1,050
60	Jct. Hwys. 60 and 35 (Dwight) to Algonquin Park headquarters	28.4	130
69 T.C.	Jct. Hwy. 11 (Gravenhurst) to 1.5 mi. north of Pointe-au-Baril	84.9	993
103 T.C.	Jct. Hwy. 12 (Waubaushene) to Jct. Hwy. 69 (Footes Bay)	31.4	2,326
118	Jct. Hwy. 69 (Glen Orchard) to Jct. Hwy. 35 (Dorset)	55.6	6,690
121	Jct. Hwy. 35 to Haliburton-Hasting's County boundary	42.9	782
124	Jct. Hwy. 69 to Secondary Hwy. 510 (Magnetawan)	39.2	6,148
400	Craighurst to Coldwater	12.4	96
501	Jct. Hwy. 103 to Honey Harbour	9.1	1,545
503	Norland to Tory Hill	35.8	1,260
507	Gooderham, 5 mi. southerly	5.0	925
514	Hwys. 35 and 60 to Interlaken	10.0	1,145
516	Jct. Hwy. 11 to Windermere	15.7	224

Crushed Gravel and Stone on Roads by Department's Forces (Cont'd)

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
518	Hwy. 69 to Sand Lake	55.8	6,640
519	Redstone Lake to Hwy. 121	33.6	1,270
520	Hwy. 11 at Burk's Falls to Ardbeg	33.7	1,632
525	Gravenhurst to Gravenhurst sanitorium	1.7	260
527	Huntsville to Baysville	16.7	466
529	Jct. Hwy. 69 to Jct. Secondary Road 529A	4.6	646
529A	Jct. Secondary Road 529 to Bayfield Inlet	3.0	108
530	Carnarvon to Secondary Hwy. 519	12.0	4,276
532	Jct. Hwy. 69 to Jct. Hwy. 11	43.2	5,660
559	South Jct. Hwy. 69 to north Jct. Hwy. 69	13.5	54
592	Novar to Emsdale	9.8	62
612	Jct. Hwy. 103 to Jct. Hwy. 69	7.0	72
632	Jct. Hwy. 118 to Jct. Secondary Hwy. 532	18.2	88
644	Pointe-au-Baril to 0.5 mi. westerly	0.5	262
	Totals	839.1	57,496

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65
11	From 1.5 mi. north of Hwy. 11B, Orillia, northerly to Sparrow Lake Road	4.98	1964	4.98
11	Sparrow Lake Road to 0.5 mi. south of Severn bridge	3.54	1964	1.70
12	Approaches to Hog River to village of Victoria Harbour	0.28	1964	0.28
69	From Moon River at Bala, southerly for 0.25 mi., including 0.25 mi. of connecting road to Hwy. 103 and 0.25 mi. reserve road	0.75	1964	0.50
121	From village of Haliburton, easterly for 1mi.	1.00	1964	1.00
124	From McKellar to Ferguson Twp. line, westerly for 1.7 mi.	1.70	1964	1.70
518	From 7.8 mi. to 8.3 mi. east of Jct. Hwys. 69 and 518	0.50	1964	0.50
519	2.0 mi. north of the Jct. of Hwys. 121 and 519	0.25	1964	0.25
520	2.5 mi. west of Burk's Falls	0.70	1964	0.70
530	5.5 mi. east of Jct. Hwys. 35 and 530	0.50	1964	0.25
530	7.5 mi. east of Jct. Hwys. 35 and 530	0.60	1964	0.60
532	From 7.8 mi. to 8.8 mi. north of Jct. Hwy. 118	1.00	1964	1.00
532	From 0.9 mi. to 1.65 mi. east of Jct. Hwys. 532 and 632	0.75	1964	0.75
644 (Dev. Rd.)	Westerly from Hwy. 103 at Moon River to Twelve Mile Bay	8.00	1964	8.00
709 (Dev. Rd.)	Machar Lake bridge to 7.0 mi. west of South River	1.40	1964	1.40
	Totals	25.95		23.61

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
11	From 1.5 mi. north of Hwy. 11B, north to Sparrow Lake Road	4.98	1964	.....	4.98	145,801
11	Sparrow Lake Road to 0.5 mi. south of Severn River bridge	3.54	1964	.....	.....	747
12 T.C.	From east end South Orillia By-pass, 1¼ mi. and Atherley Narrows bridge	1.40	1963	.....	1.40	23,144

Granular Base on New Grading (Cont'd)

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
12	Hog River bridge to Victoria Har.	0.28	1964	.....	0.28	6,289
35, 60	Jct. Hwy. 11B, easterly to Hillside	7.39	1962	7.39	.....	363
35, 60	Hillside, easterly to Dwight, including Boyne Bridges 2 and 3..	5.50	1963	.....	5.50	27,378
69	From Moon River, Bala north channel, south 0.25 mi. and C.P.R. subway.....	0.75	1964	.....	.....	9,920
69	Moon River Road to Bala.....	0.30	1964	.....	0.30	3,742
103	Go Home Bay Rd. and Hwy. 103..	0.20	1964	.....	0.20	4,725
118	Hwy. 118 from 2.4 to 3.6 mi. east of Hwy. 11.....	1.20	1963	.....	1.20	2,111
121	From village of Haliburton, east.	1.00	1964	.....	1.00	2,147
124	From 0.57 to 1.07 mi. west of Hwy. 520.....	0.50	1963	.....	0.50	713
124	From McKellar to Ferguson Twp. line, westerly 1.7 mi.....	1.70	1964	.....	1.00	54,019
518	From 7.8 to 8.3 mi. east Jct. Hwys. 69 and 518 to Orrville.....	0.50	1964	.....	.....	23,211
519	2.0 mi. north Jct. Hwys. 121 and 519 to Gelert.....	0.25	1964	.....	0.25	332
520	2.5 mi. west of Burks Falls.....	0.70	1964	.....	0.70	3,420
530	5.5 and 7.5 mi. east Jct. Hwys. 35 and 530 to West Guilford.....	1.10	1964	.....	1.10	38,193
530	From Carnarvon to Maple Lake..	6.00	1963	.....	6.00	16,518
532	5.4 mi. west of Rosseau.....	0.70	1964	.....	.....	15,309
532	From 7.8 to 8.8 mi. north Jct. Hwys. 118 and 532 to Beatrice..	1.00	1964	.....	0.50	20,034
532	0.1 mi. north of south Jct. Hwys. 516 and 532.....	0.20	1963	.....	0.20	12,239
532	From ¼ mi. east of Rosseau River easterly ½ mi.....	0.50	1964	.....	0.50	8,837
680 (Dev. Rd.)	Dillonport Road to Killbear Provincial Park.....	5.55	1963	.....	5.55	23,054
	Totals	45.24		7.39	31.16	442,246



Atherley Narrows bridge on TCH 12, east of Orillia. photo 6782 E — (Huntsville District)

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
518	Orville patrol yard	Salt storage	1964	1965
518	Orrville patrol yard	Patrol office	1964	1965
532	Rosseau patrol yard	Patrol office	1964	1965
12	Coldwater patrol yard	Patrol office	1965	1965
11	Huntsville patrol yard	Salt storage	1964	1964
612	MacTier patrol yard	Salt storage	1964	1965

Totals of Other Work Done

Item	Total Number	Total Gals.	Total Tons	Total Miles
Bridges painted	19	954	.....	.....
Calcium dust layer on gravel roads	.....	.....	.....	101.
Development roads built	.....	.....	.....	29.25
Off-road parks maintained	30	.....	.....	.....
Roads snowploughed and kept open, King's highways	14	.....	.....	566.1
Roads snowploughed and kept open, secondary h'way.	18	.....	.....	347.8
Roadside picnic places maintained	60	.....	.....	.....
Routine maintenance, King's highways	.....	.....	.....	556.1
Routine maintenance, secondary highways	.....	.....	.....	347.8
Salt for de-icing roads (raw)	.....	.....	11,100	500.
Salt in sand, stockpiled	.....	.....	2,346	.....
Sand for winter maintenance	.....	.....	98,000	.....
Scale houses maintained	3	.....	.....	.....
Seeding by department's forces (acres)	174.39	.....	.....	.....
Shrubs received and planted this year	1,235	.....	.....	.....
Signs erected or replaced	3,106	.....	.....	.....
Snow fence erected, dismantled, stored	.....	.....	.....	18.0
Traffic lights installed this year	1	.....	.....	.....
Weed control	.....	.....	.....	194.6
Zone painting on King's highways	.....	13,165	.....	566.1
Zone painting on secondary highways	.....	5,435	.....	246.8

DISTRICT No. 13 — NORTH BAY

G. Martens, P.Eng., District Engineer

Construction

Two grading, drainage and granular base contracts were in operation on Highway 17 from the junction of Secondary Road 531 to Secondary Road 630, a distance of 10.2 miles. The carry-over grading work from Secondary Road 531, 4.1 miles east, was completed, and a binder course HL4 pavement applied. Work progressed rapidly on the remaining 6.1 miles, and it is expected that the contract will be finished in the early summer months of 1965.

Two carry-over grading and paving projects on Highway 11B from North Bay southerly were also finished.

HL4 paving was completed on Highway 17 for 9.6 miles from Point Alexander to Colton Lake. Included in this contract was the application of a granular base course and HL4 pavement on Secondary Road 635, from Highway 17 at Rolphton, to the Quebec border.

Improvements to intersections on Highway 17 at County Road 15 and County Road 25, between Pembroke and Petawawa, and Victoria and Portage Road in Petawawa were carried out during the summer. The work consisted of grading, drainage, granular base, curb and gutter and paving.

A grading, drainage, and granular base contract was begun in the summer on Highway 64 from Alban easterly for 4.8 miles, and on Secondary Road 607, from Highway 64 southerly for one mile. It is expected that this work will be completed in November, 1965.

Day labour work was carried out in the district during the summer and winter months. The work consisted of pre-contract clearing, and grading, drainage, and granular base projects to improve the grade and alignment of sections of secondary roads.

Maintenance

Mileage in the North Bay district was increased in 1964 by the addition of 15 miles of Secondary Road 654, formerly South Shore Drive, and 2½ miles of Secondary Road 533, formerly the Lacave Road.

Spring breakup was normal with little excessive frost damage to the highways.

Summer maintenance operations were routine except for problems encountered on Highway 11B in the township of West Ferris, when an unusually large plague of shad flies descended on the area in the month of June.

Six miles of hot mix patching were carried out on Highway 17 between Mattawa and Rolphton.

A mulch surface was laid on 13 miles of gravel road, a prime dust layer applied on 85 miles of gravel road, and liquid calcium applied on 59 miles of gravel road.

Four new patrol yard sites were established and D.H.O. forces constructed six salt sheds and three temporary patrol offices.

An exceptionally severe winter was experienced in this district, and the cost of operations was considerably higher than usual.



Grading on Hwy. 17 near Rutherglen. photo 5860 — (North Bay District)



Hwy. 11 — 3 miles north of Timagami. photo 5878 — (North Bay District)

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
539A	C.N.R.	River Valley	2 flash., bell
805	C.N.R.	North of River Valley	2 flash., bell
630	C.P.R.	1 mi. south of Hwy. 17	2 flash., bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
11B	North Bay south limits, southerly	4.76	1963		3,297
17 T.C.	Petawawa	0.73	1964	0.73	5,034
17 T.C.	Point Alexander, northerly, westerly	9.55	1964	9.55	19,862
17 T.C.	Rutherglen, westerly	4.40	1964	4.40	7,969
635	Hwy. 17, Quebec border	1.60	1964	1.60	2,800
	Totals	21.04		16.28	38,962

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1964–65	Tons Placed 1964–65
64	Field, northerly	2.5	2.5	3,750
522	5 mi. west of Trout Creek, westerly	2.5	2.5	3,750
522	Trout Creek, westerly	1.0	1.0	1,500
534	5 mi. west of Powassan	1.0	1.0	1,500
535	North limits of Noelville	0.5	0.5	750
535	3.5 mi. north of Noelville	0.5	0.5	750
539	8 mi. north of Warren	1.5	1.5	2,250
630	3.6 mi. north of Kiosk, northerly	1.5	1.5	2,250
	Totals	11.0	11.0	16,500

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
64	Field to Marten River, various sections	4	12,161	420
64	Noelville, easterly	11	34,244	1,155
522	4 mi. west of Trout Creek, westerly	4	12,244	420
524	Jct. Hwy. 522 to Hwy. 534	3	12,096	315
528-528A	Jct. Hwy. 64 to Wolseley Bay and Pine Cove Road	11	34,244	1,155
534	Powassan to Restoule	17	53,135	1,785
535	Noelville, northerly	11	34,244	1,155
539	Field to River Valley	10	31,135	1,050
607-607A	Hwy. 69 to French River and Jct. Hwy. 64	8	24,824	840
	Totals	79	248,327	8,295

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
17 T.C.	Mattawa, easterly	60	7,610
17 T.C.	Lookout Hill, Mattawa	3	212
	Totals	63	7,822

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11B	North Bay south limits, southerly	4.76	6,754
17	Point Alexander, northwesterly	9.55	15,147
17	Petawawa intersections, County Roads 15 and 25	.....	10,942
17	Mattawa, easterly, shouldering	60.00	2,562
17	Rutherglen, westerly to Secondary Road 531	4.40	27,067
17	Rutherglen, easterly to Secondary Road 630	6.10	88,390
17	5 mi. east of North Bay stockpiled patrol yard	.....	5,000
17	Sturgeon Falls, westerly	9.00	13,400
17	Verner stockpiled patrol yard	.....	5,000
11	Temagami, stockpiled, patrol yard	.....	10,000
64	5 mi. north of Field, stockpiled	.....	20,000
64, 607	2 mi. east of Hwy. 69, northeasterly	5.85	24,278
522	Commanda, stockpiled	.....	16,500
539	8 mi. north of Warren, stockpiled	.....	6,000
630	3 mi. north of Kiosk, stockpiled	.....	14,000
805	Emerald Lake, southerly to River Valley	35.00	18,000
	Totals	134.66	283,040

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11, 11B 17, 17B	4 mi. north of Burks Falls to Latchford	138.1	4,012
T.C.	Pembroke to Hagar	176.8	7,242
63	North Bay to Temiskaming	40.3	616
64	Rutter to Jct. Hwy. 11	86.6	7,965
94	Callander to Jct. Hwy. 17	5.9	5
123	Hwy. 11 to Airport	3.8	116
124, 510	Hwy. 11 to Magnetawan	14.6	573
552, 524	Trout Creek to Loring	41.3	1,536
528-528A	Hwy. 64 to Wolseley Bay	11.6	2,763
533	Mattawa to Jct. Hwy. 63	34.8	2,352
534	Powassan to Restoule	22.1	3,238
535	Veuve River to Noelville	31.1	1,635
539-539A	Warren to Field	27.2	5,737
607-607A	French River to Jct. Hwy. 64	7.8	852
630	Hwy. 17 to Kiosk	18.5	451
654	Hwy. 11 to Nipissing	15.0	51
	Totals	677.1	39,144

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
17	T.C. Rutherglen to Hwy. 531	4.10	1963	.....	4.10
17	T.C. Rutherglen to Hwy. 630	6.10	1964	.....	5.90
17	T.C. Intersections only, Hwy. 17 and County Roads 15 and 25	.....	1964	.....	.....
64, 607	2 mi. east of Hwy. 69, northeasterly	5.85	1964	.....	2.05
64	Field, northerly	3.00	1964	.....	1.75
522	Commanda, easterly	1.00	1964	.....	.....
522	Trout Creek, westerly	1.00	1964	.....	1.00
522	5 mi. west of Trout Creek, westerly	2.50	1964	2.20	.30
528	5 mi. east of Hwy. 64	.25	1964	.....	.25
533	Hwy. 63, southerly	2.00	1964	.....	2.00
534	5 mi. west of Powassan, westerly	.50	1964	.....	.50
534	2.5 mi. west of Nipissing	1.50	1964	.....	1.50
534	Beatty Creek, curve revision	.25	1964	.....	.25
535	4 mi. north of Noelville	1.00	1964	.....	.75
630	1 mi. north of Kiosk	2.00	1964	.....	1.00
635	Hwy. 17 to Quebec border	1.60	1964	.....	1.60
654	5 mi. west of Hwy. 11	1.00	1965	.....	.75
805	8 mi. north of River Valley (railway crossing)	.50	1964	.....	.50
	Totals	34.15		2.20	24.20

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
17	T.C. Rutherglen to Hwy. 531	4.10	1963	.....	4.10	168,950
17	T.C. Rutherglen to Hwy. 630	6.10	1964	.....	5.90	314,140
17	T.C. Int. Hwy. 17 and County Roads 15 and 25	.....	1964	.....	.....	15,638
17	T.C. Port Alexander (west of Deep River), shouldering, westerly	9.55	1962	.....	9.55	17,811
64, 607	2 mi. east of Hwy. 69, northeast	5.85	1964	.....	2.05	107,040
64	Field, northerly	3.00	1964	.....	1.75	33,006
522	Trout Creek, westerly	1.00	1964	.....	1.00	9,063
522	5 mi. west of Trout Creek, westerly	2.50	1964	2.20	.30	23,373
528	5 mi. east of Hwy. 64	.25	1964	.....	.25	9,072
533	Hwy. 63, southerly	2.00	1964	.....	2.00	70,741
534	5 mi. west of Powassan	.50	1964	.....	.50	15,336
534	2.5 mi. west of Nipissing	1.50	1964	.....	1.50	55,161
534	Beatty Creek (curve revision)	.25	1964	.....	.25	3,645
535	4 mi. north of Noelville	1.00	1964	.....	.75	23,046
635	Hwy. 17 to Quebec border	1.60	1964	.....	1.60	10,760
654	5 mi. west of Hwy. 11	1.00	1965	.....	.75	19,341
805	8 mi. north of River Valley (railway crossing)	.50	1964	.....	.50	8,712
	Totals	40.70		2.20	32.75	904,835

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17	Dreany Lake patrol yard	Salt storage	1964	1964
17	Dreany Lake patrol yard	Patrol office, lunch room	1964	1964
524	Farley's Corners patrol yard	Salt storage	1964	1964
524	Farley's Corners patrol yard	Patrol office, lunch room	1964	1964
64	Noelville patrol yard	Salt storage	1964	1964
64	Lavigne patrol yard	Patrol office, lunch room	1964	1964
17	Port Alexander patrol yard	Salt storage	1965	1965
17	Port Alexander patrol yard	Equipment storage	1965	1965
17	Dreany Lake patrol yard	Equipment storage	1965	1965
17	Dreany Lake	Loader shed, tool storage	1965	1965
11	Powassan patrol yard	Equipment storage	1965	1965
533	Patrol 17 patrol yard	Patrol office, lunch room, loader shed	1964	1964
11	Material yard	Stock storage	1964	1964
11	Material yard	Sand blasting	1964	1964
11	Material yard	Construction field office	1964	1965
11	Material yard	Construction field office	1964	1965

Totals of Other Work Done

Item	Total Gals.	Total Number	Total Tons	Total Miles
Bridges painted	74.5	1	.....	.....
Calcium dust layer on gravel roads	.....	.....	904.43	.....
Off-road parks maintained	.....	14	.....	.....
Roads snowploughed and kept open, King's highways	.....	9	.....	464.5
Roads snowploughed and kept open, secondary h'ways.	.....	16	.....	215.0
Roadside picnic places maintained	.....	13	.....	.....
Routine maintenance, King's highways	.....	.....	.....	464.5
Routine maintenance, secondary highways	.....	.....	.....	215.0
Salt for de-icing roads (raw)	.....	.....	11,574	.....
Salt in sand, stockpiled	.....	.....	2,165	.....
Sand for winter maintenance	.....	.....	74,037	.....
Scale houses maintained	.....	3	.....	.....
Seeding by department's forces (acres)	.....	7	.....	.....
Signs erected or replaced	.....	4,313	.....	.....
Snow fence erected, dismantled, stored	.....	.....	.....	10.0
Weed control	.....	.....	.....	840.0
Zone painting on King's highways	9,477.5	.....	.....	396.2
Zone painting on secondary highways	1,034.0	.....	.....	41.0
Bridges painted, handrails only	207.0	13	.....	.....

DISTRICT No. 14 — NEW LISKEARD

G. M. Sinclair, P.Eng., District Engineer

Construction

There were only three large construction contracts active during fiscal year.

Grading and granular base contract on Highway 65, Quebec border westerly, was completed during summer and paving completed to 8.5 miles west of Quebec border by late fall.

Better than average weather during the fall enabled contractor to complete ten miles of paving from 19 miles to 29 miles east of Foleyet on Highway 101 before contract closed down for winter.

Construction was started in September, 1964, on the Haileybury underpass contract on Secondary Highway 558 which should be completed by August, 1965.

First of a series of grading contracts on Sudbury to Timmins Secondary Highway 544 was awarded and contractor started clearing and grubbing in March.

There were approximately 17 crushed gravel contracts completed throughout the district.

A contract for clearing from 16 to 33 miles south of Highway 101 on Secondary Highway 544 began in November and was completed in May.

Maintenance

With moderate daytime temperatures and cool nights, the runoff during the spring breakup was gradual with negligible flooding being encountered, and few difficulties experienced except for the usual problem of frost heaves. The winter of 1964-65 was long and extremely severe with respect to wide temperature fluctuations freezing rain and slush and the formation of ice on road surfaces. These severe conditions carried a large increase in the amount of salt and sand used during the winter.

Summer maintenance was routine in nature with the following items of particular note: 206 miles of gravel highways were treated with liquid calcium for dust control, 17 miles of paved highways were surface treated, 335 miles of weed and brush spraying was carried out and approximately 520 miles of highways were zone painted. There were few routine bridge repairs carried out in the summer due to the bridge crew working on municipal projects.

Special projects and items of particular interest were as follows: 27.5 miles of mulch paving was put down, 21.3 miles of which were on King's and secondary highways, also several grading and granular base jobs were completed and approximately 22 acres of seeding on capital contracts was carried out. A new 200-foot-long double single Bailey bridge was erected over the Driftwood River on Secondary Highway 577 to replace an old timber structure, and a new timber trestle bridge over the Bear Creek in Elk Lake was commenced late in the season. A new "Look Out" picnic site along the Highway 11 by-pass on the outskirts of New Liskeard and overlooking the Wabi Valley was completed and opened for the summer season. One other picnic site, that at the White Clay River on Highway 11, was extended as one of our winter day labour projects.

A new patrol site at Matachewan was developed during the year and occupied by the patrol. The project consisted of site grading and improvement, and the construction of three new buildings. Also the grading and preparation of the new patrol

site at Elk Lake by contract was nearly completed and the yard is now awaiting the erection of a new garage. One new patrol, No. 15, at Gowganda, went into operation on April 1st, 1964. There was an additional 24 miles of secondary highways assumed into the district's road system during the year, while eight miles of highway was transferred to another district.

Pavement burning was carried out at four locations within the district with generally satisfactory results.

79 building permits were approved and issued.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
101	C.N.R.	Foleyet	Automatic flashers and bell
569	O.N.R.	Heaslip	Automatic flashers and bell
572	O.N.R.	Ramore East	Automatic flashers and bell
67	O.N.R.	Porquis Jct.	Automatic flashers and bell
577	O.N.R.	Monteith	Automatic flashers and bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
65	Quebec boundary, westerly	8.52	1964	8.52	14,400
101	Foleyet, easterly 19 mi. to 29 mi.	10.00	1964	10.00	17,200
	Totals	18.52		18.52	31,600

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. 1964–65	Tons Placed 1964–65
66	From 11 mi. to 15 mi. (various sections)	1.50	1.50	1,360
569	From 6 mi. to 11 mi. east of Jct. Hwys. 624 and 569	5.00	5.00	9,218
570	From Hwy. 11 to Sesekinika	2.00	2.00	3,315
573	From Charlton north (various sections)	3.00	3.00	4,500
610	From Hwy. 101 north for 5 mi.	5.00	5.00	7,390
624	From Jct. 569 north for 2.80 mi.	2.80	2.80	4,490
640	From Secondary Hwy. 571 to Earlton Airport	2.00	2.00	3,500
	Totals	21.30	21.30	33,773

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
65	12 mi. to 15 mi. west of New Liskeard	3.0		
562	Hwy. 571 to Hwy. 65	5.0		
569	Hwy. 11, easterly	6.0		
571	Hwy. 562, northerly	2.7	50,100	1,400
	Totals	16.7	50,100	1,400

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
65	Moose Creek bridge	1965		Structural steel and reinforced concrete
101	Nat River bridge, approximately 47 mi. west of Timmins	1963	1964	Steel beam on timber cribs
558	Haileybury underpass	1964		Reinforced concrete
767	Shannon's bridge (Wright Creek), 3 mi. west of Quebec boundary	1964		Structural steel and creosoted timber piles, concrete deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
65	Kenabeek		6,000
65	Quebec boundary, westerly	5.40	30,760
65	Quebec boundary, westerly	8.50	14,200
101	Foleyet, easterly	11.00	59,550
101	Matheson, easterly	.....	6,000
101	Matheson, westerly	.....	10,000
560	Elk Lake, westerly	.....	10,050
560	Gogama, southerly	20.00	15,000
560	Elk Lake	0.1	1,825
569	Hilliardton		6,000
570	Sesekinika	2.6	10,000
573	North of Charlton	.....	6,000
576	Waterhen Creek	12.9	14,000
577	Jct. Hwys. 11 and 577	6.5	9,000
577	Hwys. 577 and 11		8,000
610	Dugwall		10,000
624	Hwys. 11 and 569		5,000
569	Hilliardton Twp.		12,000
640	Earlton Airport	2.0	10,000
	Totals	51.00	243,385

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11	Latchford to Porquis Jct.	120	1,123.50
65	Quebec boundary to Matachewan	80	5,560.50
66	Quebec boundary to Jct. Hwy. 65	60	1,749.73
67	Porquis Jct. to Jct. Hwy. 101	14	103.00
11B	South Jct. 11B to 11 to north Jct. Hwy. 11B to 11	12	251.50
101	Quebec boundary to Shawmere River	150	12,327.76
112	Jct. Hwy. 11 to Jct. Hwy. 66	12	180.00
558	Haileybury to end (Montreal River)	17	2,160.00
560	Jct. Hwy. 11 to Gogama	145	9,606.96
562	Jct. Hwy. 11 to Jct. Hwy. 65	9	20.00
564	Jct. Hwy. 112 to Boston Creek	5	175.00
566	Matachewan to end	16	1,411.00
567	Jct. Hwy. 11 to end (Loon Lake)	22	2,401.50
568	Jct. Hwy. 11 to Kenogami station	1	95.00
569	Jct. Hwy. 11 to Jct. Hwy. 624	18	10,139.64
570	Jct. 11 to Sesekinika	2	51.49

Crushed Gravel and Stone on Roads by Department's Forces (Cont'd)

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
571	Jct. Hwy. 562 to Jct. Hwy. 11	4	13.50
572	Jct. Hwy. 11 to Jct. Hwy. 101	10	218.00
573	Jct. Hwy. 11 to Charlton	13	132.00
576	Jct. Hwy. 101 to Kamiskotia mine	16	6,153.00
577	Jct. Hwy. 11 to Ansonville	16	2,474.50
610	Jct. 101 to Jct. Hwy. 67	13	1,253.00
624	Jct. Hwy. 11 to Jct. Hwy. 66	28	2,697.44
626	Matheson to Porquis Jct.	20	77.00
629	Timmins to Timmins Airport	7	141.00
650	Jct. Hwy. 112 to Adams mines	5	762.00
	Totals	815	61,278.02

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65
544	Sudbury to Timmins, 8 mi. to 16 mi. south Hwy. 101	8.31	1965	.....
558	Haileybury underpass	1.03	1964	.....
560	Realignment Hwy. 65 and Sec. Hwy. 560 at Elk Lake	0.1	1964	0.1
655	Hwy. 101 at Timmins, northerly 4.4 mi.	4.4	1965	2.0
560	Wigwam Hill revision, approx. 17 mi. west of Elk Lake	0.5	1963	0.5
560	Elk Lake, westerly, 6 mi.	6	1964	2.8
569	Dewars Hill revision, 2 to 2.5 mi. north of Jct. Hwys. 11 and 569	0.5	1964	0.5
101	Widening fills, approx. 35 mi. west of Timmins	0.5	1964	0.5
101	25 to 30 mi. west of Foleyet	0.7	1964	0.7
566	Matachewan, west	0.7	1965	0.3
560	Shiningtree, east	0.6	1964	0.6
560	20 to 30 mi. east of Gogama	0.4	1965	0.4
	Totals	23.34		8.40

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Placed Tons 1964–65
65	Quebec boundary, westerly	5.40	1963	2.70	2.70	118,500
560	Elk Lake realignment, Secondary Hwy. 560	0.1	1964	.....	0.1	2,200
560	Wigwam Hill revision, approx. 17 mi. west of Elk Lake	0.5	1963	.....	0.5	12,000
560	Elk Lake, westerly 6 mi.	6.0	1964	.....	2.8	33,000
569	Dewars Hill revision, 2 to 2.5 mi. north of Jct. Hwys. 11 and 569	0.5	1964	.....	0.5	8,400
101	25 to 30 mi. west of Foleyet	0.7	1964	.....	0.7	8,000
	Totals	13.20		2.70	7.30	182,100

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
640	From Secondary Hwy. 571 to Earlton Airport	2	1964	2	28,000
577	Shillington to Monteith	7	1964	7	13,000
624	From 4.0 mi. north of Jct. Hwys. 569 and 624 north 6 mi.	6	1964	6	25,000
610	From Jct. Hwy. 101, northeast 5 mi.	5	1964	5	15,000
576	From approx. 2 mi. north of Hwy. 101, north 10 mi., various locations	3	1964	3	21,000
558	From 9 to 17 mi. west of Haileybury	2	1964	2	12,000
	Totals	25		25	114,000

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
558W	Tri-Town	Bulk salt storage	1964	1965
65W	Elk Lake	Bulk salt storage	1964	1965
65E	Balls Corner	Bulk salt storage	1964	1965
101W	Timmins	Bulk salt storage	1964	1965
65W	Matachewan	Bulk salt storage	1964	1965
65W	Matachewan	Storing equipment	1964	1965
65W	Matachewan	Patrol office	1964	1965
560	Gowganda	Bag salt, calcium stor.	1964	1965
560	Gogama	Bag salt, calcium stor.	1964	1965
66	Swastika	Pump house	1964	1965

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	½		
Calcium dust layer on gravel roads		169	
Off-road parks maintained	14	111 tables	
Roads snowploughed and kept open, King's highways			472
Roads snowploughed and kept open, secondary highways			387
Roadside picnic places maintained	12	25 tables	
Routine maintenance, King's highways			472
Routine maintenance, secondary highways			392
Salt for de-icing roads (raw)		12,605	
Salt in sand, stockpiled		1,517	
Sand for winter maintenance		46,968	
Seeding by department's forces (acres)		41	
Shrubs received and planted this year	39		
Signs erected or replaced	2,331		
Snow fence erected, dismantled, stored			81.80
Snow hedges planted this year			0.5
Weed control, weed 214 mi., brush 141 mi.			355
Zone painting on King's highways (gals.)	5,130		417.8
Zone painting on secondary highways (gals.)	1,051		80.6

DISTRICT No. 16 — COCHRANE

J. D. Foster, P.Eng., District Engineer

Construction

The grading, drainage, granular base course, hot mix paving and structure contract on Highway 11 from 5.4 miles east of Val Albert easterly to two miles east of Secondary Highway 581 commenced in early June and was completed by late November, well ahead of schedule in spite of adverse weather conditions during most of the construction season.

Paving of Highway 11 from Val Albert easterly 5.46 miles was carried out during the month of July.

The contract for grading, drainage, granular base and hot mix paving for 5.29 miles in the Ansonville, Iroquois Falls, Montrock area which had been begun the previous year, was completed in early July.

The clearing contract from Hornepayne southerly 15 miles on Secondary Highway 631 was completed in early April and three additional clearing contracts, from 8.0 miles east of Cochrane easterly 11 miles on Secondary Highway 652 and from Pinard southerly 16.0 miles on Tertiary Road 807 were carried out during the spring and early summer.

Equipment rental contracts from Smooth Rock Falls northerly for 29 miles on Tertiary Road 807, and from 8.0 miles east of Cochrane easterly for 11.0 miles on Secondary Highway 652, were let in late fall and were well advanced when operations were shut down in late winter.

Toward the end of the fiscal year the first grading contract on the section of Secondary Highway 631 south of Hornepayne was awarded.

Maintenance

During the year construction of a new five-bay district paint shop was completed. Development of a patrol yard was commenced at Smooth Rock Falls with salt sheds erected at Smooth Rock Falls and Fauquier patrol yards.

Prefabrication of a third salt shed was started at Cochrane.

Routine summer maintenance was carried out with the following operation worthy of note. Frost taper treatment to a number of major culverts was completed with favourable results.

Prime was supplied initially to a number of secondary roads and surface treatment was extended an additional twenty miles on Highway 11, Hearst to Longlac. Extensive repairs were carried out on the Kabinakagami River bridge with new concrete curbs and standard hand rails installed. Shoulder stabilization with the use of salt and calcium chloride was carried out on a new section of highway, however, reports to date are not conclusive.

The D.H.O. crusher produced 34,500 tons of ⅝ crushed gravel in connection with a major shouldering operation of Highway 11 east of Longlac, and an additional 47,000 tons of ⅝ crushed gravel was placed on various highways throughout the district by D.H.O. forces.

We experienced prolonged severe low temperatures during January this winter, rendering chemical direct application ineffective, necessitating the use of additional treated sand being used.

70,000 cubic yards of pit-run gravel was applied to various secondary highways in connection with regrading under our winter works program and an extensive right-of-way clearing operation was carried out.

Automatic rail crossing signals were installed at Stevens on the industrial road linking Manitouage and Caramat and cost of installation was shared by the department under the Industrial Road Agreement.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
67, 578	Through Ansonville, Iroquois Falls and Montrock	1.57	1963	0.55	1.02	2,502
11	From Val Albert, easterly 5.46 mi.	5.46	1963	.....	5.46	7,975
11	From 5.46 mi. east of Val Albert, easterly to 2.0 mi. east of Secondary Hwy. 581	6.72	1963	.....	6.72	11,399
11	Pavement settlements, 5 to 10 mi. west of Kapuskasing	0.12	1964	.....	0.12	264
	Totals	13.87		0.55	13.32	22,140

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
583	Hearst to Lac Ste. Therese	7.33	24,725	1,451
636	Intersection Hwy. 11 and Hwy. 636, north 2.1 mi.	2.10	6,178	208
574	East limits town of Cochrane, easterly	9.10	24,285	802
11B	Intersection Hwy. 11 and Hwy. 11B, 4 mi. south of Cochrane, easterly through Hannah Twp., to intersection of Hwy. 11B and Hwy. 11, 10 mi. south of Cochrane	6.00	19,400	763
	Totals	24.53	74,588	3,224

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
11	From 55 mi. to 75 mi. west of Hearst	20	49,104	1,679
	Totals	20	49,104	1,679

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11	From 5.46 mi. east of Val Albert, easterly to 2.0 mi. east of Secondary Hwy. 581	6.72	73,718
574	Cochrane to Norembega	19.00	14,996
579	Cochrane to Gardiner	22.50	15,284
583	Hearst to Meade	23.00	15,128
631	Hornepayne, 20 mi. northerly	20.00	9,995
	Totals	91.22	129,121

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11	Cochrane to Porquis Jct.	28.93	207
11	Cochrane to Hearst	133.5	1,303
11	Hearst to Longlac	134.90	494
67	Iroquois Falls to Hwy. 11	6.60	285
11B	Old Hwy. 11 through Hanna Twp.	6.20	22
11B	Old Hwy. 11 through Hunta	9.50	22
Secondary Highways			
574	Cochrane to Norembega	18.00	4,893
578	Herman Lake to Montrock	6.00	10,986
579	Cochrane to Gardiner	18.00	2,976
583	Lake Ste. Therese to Mead	40.18	3,921
625	Jct. Hwys. 11 and 625 to Caramat	20.00	918
631	Hct. Hwys. 11 and 631 to Hornepayne	46.00	13,130
636	Jct. Hwys. 11 and 636 to Frederickhouse	3.00	2,367
	Totals	470.81	41,524

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65
11	From 5.46 mi. east of Val Albert, easterly to 2.0 mi. east of Secondary Hwy. 581	6.72	1964	6.72
652	From 8 mi. east of Cochrane, easterly 11 mi. to Wade Lake	11.00	1964	.....
807	Smooth Rock Falls, 29 mi. northerly	28.30	1964	.....
807	From 29 mi. north of Smooth Rock Falls, 16 mi. northerly to Pinard	16.22	1964	.....
	Totals	62.24		6.72

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
11	From 5.46 mi. east of Val Albert, easterly to 2.0 mi. east of Secondary Hwy. 581	6.72	1964	6.72	395,968
652	From 8 mi. east of Cochrane, easterly 11 mi. to Wade Lake	11.00	1964	.....	279,510
807	Smooth Rock Falls, 29 mi. northerly	28.30	1964	.....	216,408
807	From 29 mi. north of Smooth Rock Falls, 16 mi. northerly to Pinard	16.22	1964	.....	32,366
	Totals	62.24		6.72	924,252

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
574	Cochrane to Norembega	8	1965	8	16,847
578	Herman Lake to Montrock	2	1964	2	2,966
579	Cochrane to Gardiner	15	1964	15	18,209
583	Mead to Hearst	5	1964	5	21,235
63	Jct. Hwys. 11 and 631 to Hornepayne	8	1965	8	31,238
11B	Jct. Hwy. 11 and Old Hwy. 11, 10 mi. west of Cochrane, north 5 mi.	5	1965	5	8,667
	Totals	43		43	99,162

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11	T.C. Cochrane headquarters	Paint and carpenter shop	1963	1965
11	T.C. Smooth Rock Falls patrol site	Salt shed	1964	1965
11	T.C. Fauquier patrol site	Salt shed	1964	1965
11	T.C. New Kapuskasing patrol site	Loader storage	1964	1964

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	947.9	.....
Calcium for de-icing roads	.....	40.3	.....
Roads snowploughed and kept open, King's highways	3	.....	320.50
Roads snowploughed and kept open, secondary highways	9	.....	149.69
Roadside picnic places maintained	12	.....	.....
Routine maintenance, King's highways	3	.....	320.50
Routine maintenance, secondary highways	9	.....	149.69
Salt for de-icing roads (raw)	.....	5,835.2	320.50
Salt in sand, stockpiled		730.0	
Sand for winter maintenance	.....	19,688	.....
Scale houses maintained	5	.....	.....
Seeding by department's forces (acres)	132.5	.....	.....
Shrubs received and planted this year	33	.....	
Signs erected or replaced	1,374		
Snow fence erected, dismantled, stored (feet)	48,400		
Weed control, Hwys. 11, 11B, 67, 581, 631, 636 6,500 Lbs. 460 Gals.	.....	.....	191.1
Zone painting on King's highways (gals.)	2,254	.....	264.6
Zone painting on secondary highways (gals.)	24	.....	3

DISTRICT No. 17 — SUDBURY

T. A. Sharpe, P.Eng., District Engineer

Construction

The major development last season was the decision to build the Sudbury-Timmins highway and to locate it north-west of Sudbury as an extension to existing Secondary Highway 544.



Sec. Hwy. 639 — 12 miles north of Elliot Lake. photo 5722 — (Sudbury District)

In keeping with this plan a contract for eight miles of grading, drainage and granular base was completed from Windy Lake to Cartier on completely new alignment, thus shortening the route between these two points by half. Also a clearing job was begun in January covering the first 6.44 miles beyond the end of the existing road near Benny.

Another grading, drainage and granular base contract was completed from Birch Island Village southerly to La Cloche Channel on Highway 68, a distance of 4.25 miles, and a hot mix paving contract was completed over this contract and two previously constructed grading contracts to the north, a distance of 13 miles.

Secondary Highway 639 is being extended under an equipment rental contract for grading and drainage which is presently in the last stages of construction with a target completion date of June, 1965. This 7.59-mile contract completes the link between Highway 108 and Secondary Highway 546. Also, two granular base contracts, one completed and one to be done this spring, will top off this section with crushed gravel.

A structure at the Boland River is also being constructed in this section.

In the city of Sudbury, on Highway 17, a grading, drainage, granular base, hot mix paving, sewers and watermains job of some complexity was completed, a distance of 1.58 miles, thus modernizing the eastern gateway to the city.

In connection with this work, an offtake storm sewer was constructed along Bancroft Drive to Minnow Lake.

Several day labour jobs were undertaken on various highways in the district to improve grade and alignment on difficult sections of road.

MAINTENANCE

Normal maintenance operations continued throughout the district.

The program of shoulder stabilization was somewhat curtailed due to the abnormal amount of precipitation during the summer and fall.

The past winter was abnormally severe, and in particular, storms commencing February 25th and March 18th. Accordingly, equipment, sand, and salt usage was higher than normal.

Six bridges were painted by contract.

Two large Bailey bridges were constructed on Secondary Highway 557. Alignment shoulder and drainage improvements were extensively carried out on Secondary Highways 537, 540, 542, 549, 555, 557 and 634.

Our winter works projects consisted of realignments through much rock on Secondary Highways 537 and 637, brushing and development of picnic sites at various locations, and the replacement of several timber structures with multi-plate structures.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
537	C.P.R.	Wanup	2 flash. lights
541	C.N.R.	North of Bailey's Corners	2 flash. lights, 1 bell
544	C.P.R.	Near Windy Lake	2 flash. lights and short arm gates, 1 bell
553	C.P.R.	Massey	2 flash. lights, 1 bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
68	From 3 mi. north of Whitefish Falls to La Cloche channel	13.00	1964	13.00	21,494
17	Sudbury old eastern city limits, easterly to Barrydowne Road	1.58	1964	1.58	11,508
17	Bancroft Drive from Hwy. 17 to Minnow Lake (patching)	.....	1964	.....	11,576
	Totals	14.58		14.58	33,117.76

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
526	Hwy. 69 to Britt	2.3	6,797	389
529	Hwy. 69 to Secondary Hwy. 529A	12.2	25,407	685
540	Jct. Hwys. 542 and 540, westerly	11.5	37,502	1,336
542	Jct. Hwys. 542 and 68, westerly	10.0	34,974	1,179
549	Hwy. 17 to Lake Penage	9.0	24,620	822
551	Mindemoya to West Bay	7.0	19,873	681
68	10 mi. south of Little Current to South Bay mouth	32.0	86,044	2,294
	Totals	84.0	235,217	7,386

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
557	3.7 mi. north of Hwy. 17	1964	1964	Bailey
557	8 mi. north of Hwy. 17	1964	1964	Bailey

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
17	Sudbury old eastern city limits, easterly to Barry Downe Road	1.58	47,633.02
17	Various locations (stockpiled)	.....	1,999.29
17	Hwy. 17 to Minnow Lake on Bancroft Drive	0.38	1,723.98
68	Birch Island village to La Cloche channel	4.25	47,155.35
68	3 mi. north of Whitefish Falls, southerly to La Cloche channel (hot mix paving)	13.00	16,138.80
69	Various locations (stockpiled)	.....	5,998.60
544	2 mi. west of intersection Hwys. 544 and 544A, northwesterly to Cartier	8.21	71,549.00
553	Various locations (stockpiled)	.....	10,005.76
557	Various locations (stockpiled)	.....	9,997.99
	Totals	27.42	212,201.79

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
	Various locations throughout district	535	107,555
	Totals	535	107,555

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
17	Old Sudbury eastern city limits, easterly to Barry Downe Road	1.58	1963	0.20	1.38
17	Hwy. 17 to Minnow Lake on Bancroft Drive	0.38	1963	.....	0.38
68	Birch Island village to La Cloche channel	4.25	1964	1.00	3.25
537	2.5 mi. south of Wanapitei, southerly	0.50	1964	.....	0.50
537	5 mi. south of Wanapitei, southerly	0.50	1964	.....	0.50
542	Big Lake to Mindemoya	6.00	1964	.....	6.00
542	Realignment and erection of multi-plate, east of Mindemoya	0.50	1964	.....	0.50
544	2 mi. west of intersection Hwys. 544 and 544A westerly	8.21	1964	0.10	8.11
549	7 mi. south of Hwy. 17, southerly	0.50	1964	.....	.....
637	24 mi. west of Hwy. 69	0.50	1964	.....	0.50
637	34 mi. west of Hwy. 69	0.60	1964	.....	0.60
639	Jimchrist Lake to Secondary Hwy. 546	7.59	1963	1.25	6.34
	Totals	31.11		2.55	28.56

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Placed Tons 1964–65
17	Old Sudbury eastern city limits, easterly to Barrydowne Road	1.58	1964	1.58	38,743
17	From Hwy. 17 to Minnow Lake (Brancroft Drive)	0.38	1964	0.38	785
68	Birch Island village, southerly to LaCloche Channel	4.26	1964	4.25	45,151
538	Hwy. 17 westerly (Algoma Mills)	0.50	1964	0.50	1,599
540	1 mi. east of Kagawong to 6.5 mi. west of Kagawong	7.50	1964	7.50	29,772
542	Big Lake to Mindemoya	6.00	1964	6.00	30,018
542	East of Mindemoya	0.50	1964	0.50	25,692
544	2 mi. west of intersection Hwys. 544 & 544A, westerly to Cartier	7.59	1964	7.59	66,555
549	Various locations Hwy. 17 southerly	7.00	1964	7.00	23,475
555	From 1 mi. north of Blind River, northerly	1.00	1964	1.00	5,350
639	Algom-Quirke Mine to Jimchrist Lake	6.69	1964	6.69	27,500
	Totals	42.99		42.99	294,640

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
Old 17	Crean Hill intersection (culvert)	.....	1964	.....	1,503
68	3 mi. north of Whitefish Falls, southerly to LaCloche Channel	13.0	1964	13.0	13,233
69	McFarlane Lake to Estaire (various)	.....	1964	.....	4,059
557	8 mi. north of Hwy. 17 (bridge approach)	.....	1964	.....	859
557	3.7 mi. north of Hwy. 17 (bridge approach)	.....	1964	.....	1,238
557	Various locations (granular lift)	.....	1964	.....	4,734
	Totals	13.0		13.0	25,626

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17 T.C.	D.H.O. patrol yard, McKerrow	Standard salt shed	1964	1965
17 T.C.	D.H.O. patrol yard, Walford	Standard salt shed	1963	1964
17 T.C.	D.H.O. patrol yard, Blind River	Standard salt shed	1964	1965
542	D.H.O. patrol yard, Tehkummah	Standard salt shed	1964	1964



TCH 17 — 1½ miles east of Webbwood. photo 6283 — (Sudbury District)

Totals of Other Work Done

Item		Total Number	Total Tons	Total Miles
Bridges painted		6	.....	.....
Calcium dust layer on gravel roads		.....	1,450	341
Development roads built		.....	.....	3.4
Off-road parks maintained		16	.....	.....
Roads snowploughed and kept open, King's highways		.....	.....	353.34
Roads snowploughed and kept open, secondary highways		.....	.....	407.80
Roadside picnic places maintained		14	.....	.....
Routine maintenance, King's highways		.....	.....	353.34
Routine maintenance, secondary highways		.....	.....	441.10
Salt for de-icing roads (raw)		.....	13,475	.....
Salt in sand, stockpiled		.....	2,117	.....
Sand for winter maintenance		.....	53,717	.....
Scale houses maintained		1	.....	.....
Seeding by department's forces	(acres)	86.1	.....	.....
Shrubs received and planted this year		515	.....	.....
Signs erected or replaced		8,956	.....	.....
Snow fence erected, dismantled, stored		.....	.....	20
Snow hedges planted this year	(spruce)	1,000	.....	.....
Weed control		.....	.....	237.5
Zone painting on King's highways	(gals.)	6,888	.....	294.0
Zone painting on secondary highways	(gals.)	2,987	.....	119.5

DISTRICT No. 18 — SAULT STE. MARIE

A. A. Ward, P.Eng., District Engineer

Construction

Grading, drainage and hot mix paving was completed on Highway 17 T.C.H. from 1.14 miles west of Secondary Highway 563 northerly 7.68 miles. The new Pancake River bridge was included in this project.

Grading, drainage and granular base was completed on Highway 101 from 7.92 miles east of Wawa easterly for 3.36 miles to the junction of Secondary Highway 547 and northerly on Highway 547, 3.63 miles to Hawk Junction. This work included the Hawk Creek and McVeigh Creek structures. Work was also started on Highway 101 on grading, drainage and granular base from the junction of Highway 547, southerly 7.6 miles including the Michipicoten River bridge.

In addition, right-of-way clearing on Highway 101 was continued from the Michipicoten River easterly 7.97 miles.

Grading, drainage, and granular base was completed on Highway 101 from Big Pine Lake westerly 10.5 miles. This work included composite timber and concrete structures over Giles Creek and Little Pine Lake. Work was also started on the next portion of Highway 101, 30.8 miles west of Highway 129, westerly 10.7 miles to the Jackpine River.

Right-of-way clearing was continued on Highway 101 from the Jackpine River westerly 10.2 miles.

Grading, drainage, granular base and hot mix paving was completed with the exception of trimming and sodding on Secondary Highway 550 from Korah Road to Highway 17 for 2 29 miles.

Clearing was completed for 11.4 miles on Highway 17 from 8.82 miles north of Highway 563 northerly.



Reconstructing Sec. Hwy. 550 east of Korah Rd. photo 5458 — (Sault Ste. Marie District)



Hwy. 101 — 30 miles west of Chapleau. photo 5739 — (Sault Ste. Marie District)

MAINTENANCE

Short stretches of cold mix pavement were laid by district forces north of Echo Bay and south of Richard's Landing.

Grading and landscaping of the district garage area were continued. Trees were planted at various new patrol yards.

A new two-patrol garage was built at White River, and six salt storage sheds were completed throughout the district.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
129	C.P.R.	North of Thessalon	Flashing lights and bell
556	A.C.R.	Heyden	Flashing lights and bell
627	C.P.R.	Heron Bay	Flashing lights and bell

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
17 T.C.	From 1.14 mi. west of Secondary Hwy. 563, northerly	7.68	1964	7.68	13,000
550	From Korah Road in Sault Ste. Marie, easterly to Hwy. 17	2.29	1964	2.29	11,762
	Totals	9.97		9.97	24,762

Bituminous Mulch and Cold Mix

Hwy. No.	Location	Total Miles	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
548	Southerly from Richard's Landing, St. Joseph Island	7.5	....	2.5	3,750
638	Echo Bay, northerly	2.5	1.5	1.0	1,500
	Totals	10.0	1.5	3.5	5,250

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
546	Iron bridge, northerly	2	6,000	240
557	Sections from Hwy. 17, westerly	1	3,000	120
	Totals	3	9,000	360

Bituminous Resurfacing of Old Pavement

Hwy. No.	Location	Miles Done 1964–65	Tons Placed 1964–65
17 T.C.	Thessalon, westerly over 23.65 mi. (various locations)	23.65	4,876

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Crushed Gravel Used 1964–65
129	Sections, 15 to 30 mi. north of Thessalon	7.0	2,100	1,050
552	Heyden to Goulais Mission	15.5	46,500	2,300
	Totals	22.5	48,600	3,350

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
17 T.C.	Pancake River bridge	1964	1964	Piles, concrete deck
101	Hawk Creek bridge	1963	1964	Piles, concrete deck
101	McVeigh Creek bridge	1963	1964	Piles, concrete deck
101	Giles Creek bridge	1963	1964	Piles, concrete deck
101	Little Pine Lake bridge	1963	1964	Piles, concrete deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
17 T.C.	From 1.14 mi. west of Secondary Hwy. 563, northerly	7.68	93,158
17 T.C.	Thessalon, west 23.65 mi., various locations	23.65	3,395
101	From Big Pine Lake, westerly	10.45	65,807
101, 547	Hwy. 101 to 7.9 mi. east of Wawa, easterly 3.63 mi.; Hwy. 547 from Hwy. 101 to Hawk Jct., 3.30 mi.	6.93	49,798
129	Various locations	.....	25,496
129	From 45 mi. north of intersection of Hwys. 17 and 129, northerly	15.00	22,498
129	Various locations	.....	15,001
548	At Richards Landing	.....	7,528
548	Various locations	.....	12,486
550	Korah Road to Hwy. 17	2.29	34,003
556	Various locations	.....	7,996
561	Patrol yard, Bruce Mines	.....	9,996
651	7.12 mi. north of Dalton, northerly	7.69	19,193
	Totals	73.69	366,355

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
17	Blind River to Marathon	352	10,850
101	Chapleau, east and west	72	579
129	Thessalon to Chapleau	145	9,792
546	White River Road	50	66
548	St. Joseph Island	49	1,668
550	Gros Cap Road	13	4,945
552	Goulais Bay Road	13	2,249
554	Parkinson Road	11	125
556	Searchmont Road	26	1,224
561	Dunn's Valley Road	14	604
614	Manitouwadge Road	38	3,241
627	Heron Bay Road	5	6
638	Sylvan Valley Road	27	325
	Totals	815	35,674

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
17 T.C.	From 1.14 mi. west of Secondary Hwy. 563, northerly	7.68	1964	.....	7.68
101	From Big Pine Lake, westerly	10.45	1963	7.73	2.72
101	From 30.8 mi. west Hwy. 129, westerly	10.70	1964	.....	4.81
101	From Jct. of Secondary Hwy. 547, southerly	7.86	1964	.....	3.06
101, 547	Hwy. 101 to 7.9 mi. east of Wawa, easterly 3.63 mi.; Hwy. 547, from Hwy. 101 to Hawk Jct., 3.30 mi.	6.93	1963	3.33	3.60
550	From Korah Road in Sault Ste. Marie, easterly to Hwy. 17	2.29	1964	.....	2.29
	Totals	45.91		11.06	24.16

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
101	From 30.8 mi. west of Hwy. 129, westerly	10.70	1964	3.06	9,962

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
17	T.C. White River patrol yard	Garage and office for two patrols	1964	1965
17	T.C. Marathon patrol yard	Standard salt shed	1964	1964
17	T.C. White River patrol yard (2 sheds)	Standard salt shed	1964	1964
17	T.C. Wawa patrol yard	Standard salt shed	1964	1964
17	T.C. Thessalon patrol yard (new)	Standard salt shed	1964	1964
548	Hilton Beach patrol yard (new)	Standard salt shed	1964	1964

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Calcium dust layer on gravel roads	.....	1,135	.....
Off-road parks maintained	13	.....	.....
Roads snowploughed and kept open, King's highways	.....	.....	568
Roads snowploughed and kept open, secondary highways			255
Roadside picnic places maintained	26	.....	.....
Routine maintenance, King's highways	.....	.....	568
Routine maintenance, secondary highways	.....	.....	255
Salt for de-icing roads (raw) (bulk coarse)	.....	8,948	
Salt in sand, stockpiled (bulk fine)	.....	2,351	
Sand for winter maintenance	.....	70,000	
Scale houses maintained	1	.....	
Seeding by department's forces (acres)	25	.....	
Shrubs received and planted this year	2,240		
Signs erected or replaced (sq. ft.)	7,029		
Weed control (gals.)	705	.....	
Zone painting on King's highways (gals.)	5,670	.....	.....
Zone painting on secondary highways (gals.)	630		

DISTRICT No. 19 — FORT WILLIAM

V. A. Snell, P.Eng., District Engineer

Construction

During the past year, construction progress in this area was hampered by unusually wet weather. Six inches in excess of normal precipitation was recorded by the local weather station between the months of April and September. For the same period of time the records on one of our contracts showed a loss of 25 working days due to inclement weather.

West of Fort William, a section of T.C. Highway 17 from 10.4 miles east to 5.2 miles west of English River was reconstructed to the T.C. standards and paved. The next section west, 6.7 miles long, was graded and will receive hot mix pavement this summer. Reconstruction of another section of T.C. Highway from 11.9 miles west of English River westerly 13.52 miles commenced last November.

A hot mix paving contract on Highway 11 and 17 T.C. from junction Highway 130 westerly 11.58 miles which started in 1963 was completed. Concrete curb and gutters, sewers and catch basins have been installed on the main street of Kakabeka Falls in order to alleviate the problem of draining surface water, and this new urban section considerably improved the town's appearance.

A half-mile-long section of Highway 130, south of junction Highway 11 and 17 T.C. was reconstructed and an old timber structure over Pennock Creek replaced by a large concrete culvert. Improvement in vertical alignment on this contract eliminated an accident-prone location.

In July, 1964, west of Fort William on T.C. Highway 17, two overhead structures were opened to traffic: one over C.N.R. double track four miles west of junction Highway 130, and the other over C.P.R. double track eight miles east of English River.



Pigeon River International Bridge — Officially opened in May. photo 4404 — (Fort William District)



Ignace — Valora Industrial Road, photo 5487 — (Fort William District)

Two additional structures were built in 1964 and opened for public use. They were timber crib and steel girder bridges over the Crow River on Secondary Highway 599 at Central Patricia and at July Falls, some 16 miles north of Central Patricia.

A total of five bridge decks were water-proofed by means of bituminous emulsion membrane. These include four new structures over the railway tracks and Kakabeka Falls bridge, all of them are located on T.C. Highway 17 west of Fort William.

On Highway 11, the last section of the Atikokan-Fort Frances link supervised by Fort William District, was in its final stage. All grading was completed, and the impressive steel superstructure was erected. The completion of a concrete deck and paving between Atikokan and this structure during 1965 will open an important traffic artery for public use.

All contracts under construction in the district were west of the lakehead cities.

Although the new international bridge at Pigeon River has been used by the travelling public since November 1st, 1963, the official opening took place on 23rd of May, 1964.

It should also be noted that the last year, our district had a heavy Resources and Access Roads program resulting in construction of some 59 miles of new roads. The design criteria for this type of road allows minimal standards of vertical and horizontal alignment, but due to the topography of the country traversed, it was possible at no extra cost to attain alignment equal to that of roads in the King's highway system. With the completion of the English River bridge in the summer of 1965, it will be possible to drive as far north as latitude 52°, the most northerly point accessible by road or rail in Ontario.

Maintenance

Communications, particularly in the vicinity of the District Office, were greatly im-

proved with the installation of two-way radios on most patrols. With the completion of the system in 1965, greater efficiency should be obtained throughout the district.

A total of 93,875 tons of granular base was placed on Secondary Highways 593, 595, 597 and 588 during the winter season. The district is using this method to upgrade secondary highways in the area west and south of Fort William.

With the department crusher, the district placed 18,000 tons crushed gravel on Highways 623 and 802 and placed 44,000 tons in stockpile.

Routine maintenance was carried out on 622 miles of King's highways and on 483 miles of secondary roads.

Automatic signals were installed on Highway 623, Sapawe Road.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
623	C.N.R.	2 mi. north Hwy. 11, Blalock	Flashing lights

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
11, 17 T.C.	1.2 mi. east of Hwy. 130, westerly to Kakabeka Falls	11.58	1963	5.00	6.58	12,238.38
11, 17	10 mi. east of Port Arthur city limits	0.12	1963	.....	0.12	157.10
17 T.C.	English River, easterly 10.4 mi.	10.40	1964	.....	10.40	26,768.88
17 T.C.	English River, westerly 11.91 mi.	11.91	1964	.....	5.20	14,500.92
130	Jct. Hwy. 17, southerly 0.5 mi.	0.50	1964	.....	0.50	934.58
	Totals	34.51		5.00	22.80	556,599.86

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65
17A	From Jct. Hwys. 11 and 17 to 15 mi. east	15.0	27,020	1,757.9
585	From Jct. Hwys. 11 and 17 to Pine Portage	16.0	24,622	1,590.0
587	From Jct. Hwys. 11 and 17 to Silver Islet	27.0	44,030	3,020.7
588	Jct. Hwys. 11 and 17 to Stanley, 1.6 mi.; Jct. Hwys. 590 and 588 to Nolalu, 1 mi.	2.6	3,500	306.0
589	From Jct. Hwys. 11A and 17A to 18 mi. north	19.0	22,439	1,458.7
590	From Jct. Hwy. 130 to Nolalu	23.6	35,538	2,628.0
591	From Jct. Hwy. 589 to Trout Lake	6.0	10,652	552.7
595	From Jct. Hwy. 590 to Jct. Hwy. 588	7.0	13,812	794.0
595	South Gillies	1.2	3,000	99.0
608	Jct. 595 to South Gillies	.5	950	36.0
	Totals	117.9	185,563	12,243.0

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
720	White Fish River, Lot 10, Conc. V, Township of Gillies	1964	1964	Timber cribs, steel girders, Concrete slab
17 T.C.	Lot 2, Conc. IV, Township of Pyramid	1962	1964	Steel beam, concrete slab
11, 17	Lots 20 and 21, Conc. II, Township of Paipoonge	1963	1964	Steel beam, concrete slab
599	Crow River at Central Patricia, Twp. Connell	1964	1964	Timber cribs, laminated timber deck, steel girders
599	Crow River at July Falls, unsurveyed territory	1964	1964	Timber cribs, laminated timber deck, steel girders

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11, 17	Hwy. 130, westerly, including C.N.R. overhead	6.03	922
11, 17	1.21 mi. east of Hwy. 130 and west to Kakabeka Falls	11.58	22,127
11	From 23.9 mi. to 34.0 mi. west of Atikokan	10.10	95,134
17 T.C.	English River, easterly 10.4 mi.	10.4	38,880
17 T.C.	English River, westerly 11.91 mi., excluding C.P.R. overhead	10.38	107,799
17 T.C.	English River, westerly 11.91 mi.	11.91	17,005
130	Hwys. 11 and 17, southerly 0.5 mi.	0.50	935
	Totals	60.90	282,802

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
17	Coldwell to Nipigon	105	2,655
11, 17	Nipigon to Fort William	72	1,410
11, 17	Fort William to Shabaqua	40	493
17	Jct. Hwys. 11 and 17 to Upsala	49	538
17	Upsala to Firesteel River	9	12,383
11	Jct. Hwys. 11 and 584 to 20 mi. west	20	14,612
11	20 mi. west of Jct. Hwys. 11 and 584 to Nipigon	80	937
11	Jct. Hwy. 17 to Atikokan	88	2,832
11, 17A	Port Arthur city limits to Jct. Hwys. 11 and 17	21	649
61	Fort William city limits to Pine River	27	720
130	Port Arthur city limits to Jct. Hwys. 11 and 17	9	35
593	Jct. Hwys. 588 to 6 mi. south	6	6,651
595	South Gillies to 6 mi. south	6	4,261
623	Hwy. 11 to Sapawe	4	6,812
802	Hwy. 11 to Coldstream Mines	7	11,190
	Totals	543	66,178

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
11	From 23.9 mi. to 34.0 mi. west of Atikokan	10.10	1963	4.80	5.00
17 T.C.	English River, westerly 11.91 mi., excluding C.P.R. overhead approaches	10.38	1964	.....	10.38
17 T.C.	11.2 mi. west of English River, westerly 13.52 miles	13.52	1964	.....	1.50
130	Jct. Hwys. 11 and 17, southerly 0.5 mi.	0.50	1964	.....	0.50
	Totals	34.50		4.80	17.38

Granular Base On New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
11	23.9 mi. west of Atikokan to 34.0 mi. west of Atikokan	10.10	1963	0.40	9.70	405,524
11, 17 T.C.	1.2 mi. east of Jct. Hwy. 130 westerly to Kakabeka Falls	11.58	1963	.....	11.58	6,994
17 T.C.	English River, westerly 11.91 mi., including C.P.R. overhead approaches	10.38	1964	.....	10.38	204,973
130	Jct. Hwys. 11 and 17 southerly 0.50 mi.	0.50	1964	.....	0.50	21,245
599	English River structure and approaches to 22.0 mi. north of Ignace	0.18	1964	.....	0.18	19,353
	Totals	32.74		0.40	32.34	658,089

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
593	10 mi. south of Jct. Hwys. 593 and 588, 14 mi. south	14	1965	14	47,600
597, 595	6 mi. north Jct. Hwys. 595 and 597; 4 mi. west Jct. Hwys. 595 and 597	10	1965	10	28,080
588	1 mi. Jct. Hwys. 588 and 495, northerly 3 mi.	3	1965	3	9,835
588	Jct. Hwys. 593 and 588, westerly 3 mi.	3	1965	3	8,360
	Totals	30		30	93,875

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
11W	2½ mi. west of Atikokan on new highway, unsurveyed territory, Rainy River district	Salt shed	1964	1964
11W	2½ mi. west of Atikokan on new highway, unsurveyed territory, Rainy River district	Salt shed	1964	1964
11N	Lot 20, Conc. 21, Township of Summers (Beardmore)	Salt shed	1964	1964
17E	Unsubdivided, Township 86 (Rossport)	Salt shed	1964	1965
11, 17E	Lot 14, Conc. 1, Township of Nipigon	Salt shed	1964	1965
11, 17E	Lot 14, Conc. 1, Township of Nipigon	Salt shed	1965	1965

Totals of Other Work Done

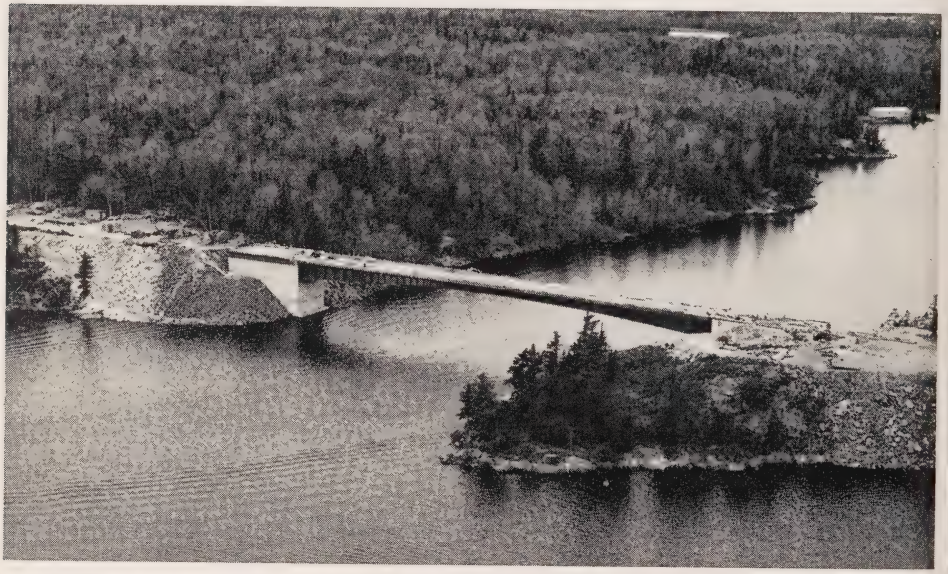
Item	Total Number	Total Tons	Total Miles
Bridges painted	3	.....	.....
Calcium dust layer on gravel roads	.....	900	200
Calcium for de-icing roads	.....	50	100
Off-road parks maintained	19		
Roads snowploughed and kept open, King's highways	.....	.....	622
Roads snowploughed and kept open, secondary highways	.....	.....	483
Roadside picnic places maintained	14	.....	.....
Routine maintenance, King's highways	.....	.....	622
Routine maintenance, secondary highways	.....	.....	483
Salt for de-icing roads (raw)	.....	5,375	
Salt in sand, stockpiled		1,400	
Sand for winter maintenance	.....	28,315	.....
Scale houses maintained	2		
Seeding by department's forces (acres)	250	.....	.....
Signs erected or replaced	2,600		
Snow fence erected, dismantled, stored	.....	.....	20
Weed control			1,033
Zone painting on King's highways (gals.)	2,786	.....	637.5
Zone painting on secondary highways (gals.)	312	.....	27.3

DISTRICT No. 20 — KENORA

C. R. Robertson, P.Eng., District Engineer

Construction

A heavy rock grading contract on Trans-Canada Highway 17 from Keewatin westerly for 9.56 miles was completed and covered with one lift of hot mix asphalt. The balance of this paving contract, including resurfacing from the hospital in Kenora to the town of Keewatin and patching of four locations between the end of this paving contract and the Manitoba boundary, should be completed by mid-summer.



Bear Passage Bridge on Hwy. 11 — 16 miles east of the Noden Causeway. photo 5523 — (Kenora District)

Work was started on a grading and granular base contract from Kenora east limits 5.27 miles easterly on Trans-Canada Highway 17, and it is expected this contract will be completed during summer of 1965 in time to place hot mix pavement on this section.

At Dryden, on Trans-Canada Highway 17, the work of sub-excavation, granular base, storm sewers, curb and gutter, and hot mix pavement through the town was completed.

On Highway 11, in the Fort Frances area, work was completed on a rock grading contract from 10.4 miles east of the Rainy Lake causeway easterly for 12.43 miles.

A granular base and hot mix paving contract from 5 miles east of Fort Frances, on Highway 11, easterly 13.74 miles, was completed, providing a good driving surface on this new section of Highway 11.

The Bear Passage bridge on Highway 11, located 16.0 miles east of the Rainy Lake causeway, was completed and opened to traffic, providing the first access by road to sections east of this structure.

Further east of the causeway on Highway 11 work proceeded on two grading contracts east and west of Mine Centre, but because of excessively wet weather in this area, delaying work during the summer months, these contracts will not be completed until the early summer of 1965.

On Highway 105 one lift of hot mix asphalt was placed from 12 miles south of Ear Falls to Ear Falls. The balance of this contract which consists of placing the top course from Ear Falls northerly for 8.32 miles will be carried out early in 1965. Also another section of grading and granular base was completed on Highway 105 from 12 miles south of Ear Falls southerly for 15.25 miles.

Maintenance

Highway mileage in Kenora District was increased by the addition of 30 miles of Highway 11 from Bears Passage to the Seine River.

Day labour forces throughout the district completed grading, drainage and granular base work on approximately 25 miles of Secondary Highways 594, 601, 602, 605 and 613. Six miles of Highway 600, Highway 641 and Highway 596 from junction 641 to Minaki (for a total of 33 miles) were reprimed and 10 miles of Highway 602 was primed. Highway 604 from Kenora town limits to the Kenora Airport, a distance of 5.5 miles, was surface treated. All of this work was done by district forces.

Our crushing plant operated in Fort William, Cochrane and Kenora districts, producing 133,500 tons of crushed gravel with 28,000 tons being crushed in this district.

Salt sheds were constructed by day labour at the following locations—two at Red Lake Road Station, one at Ely Lake and Dinorwic, and two at Laclu. An extension was also constructed on the patrolman's residence at South Narrow Lake.

Day labour forces carried out seeding operations on Highway 116 and two miles of Highway 72, and also 28 miles in the vicinity of Ear Falls on Highway 105.

Our winter works projects consisted of clearing and brushing right-of-way in six locations, brushing and digging offtake ditches in six locations and brushing, landscaping and other improvements in seven park and picnic site locations.



Reconstructing TCH 17 west of Keewatin, photo 5541 — (Kenora District)

Our bridge crew erected steel beam guide rail on Lower Falls bridge—Highway 609, and day labour and patrol crews did maintenance painting on hand rail and beams on eight bridges throughout the district.

Automatic Signals at Railway Crossings

Hwy. No.	Railway	Location	Type
Secondary Highways			
602	C.N.R.	Level crossing at Emo (Township of Lash), Mileage 108.7, Fort Frances subdivision	2 flash. light signals, 1 bell
600	C.N.R.	Level crossing at Rainy River (Township of Atwood), mileage 0.78, Sprague subdivision	2 flash. light signals, 1 bell with additional signal in northwest quadrant.

Bituminous Hot Mix Pavement

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
11	From Rainy Lake causeway, 5 mi. east of Fort Frances, easterly for 13.74 mi.	13.74	1963	1.00	12.74	19,876
17 T.C.	From east entrance of Keewatin, westerly 10.17 mi., and from Jct. Parsons Street (Kenora), easterly 0.5 mi., plus work on Cameron Bay bridge. (Total length of 11.56 mi.)	9.60	1964	.....	9.60	16,418
17 T.C.	Blackwater Creek, 10.4 mi. east of Dryden, westerly for 19.31 mi., including work in Dryden (2.9 mi.)	19.31	1963	16.41	2.90	9,137
71	Reed Narrows bridge, 4.6 mi. north of Sioux Narrows	75 Ft.	1964	.....	75 Ft.	279
105	From 12.12 mi. south of Ear Falls, northerly 20.44 mi., plus deck of Trout River bridge	12.10	1964	.....	12.10	17,018
	Totals	54.75		17.41	37.34	62,728

Cold Mix Patch and Resurfacing

Hwy. No.	Location	Total Miles	Miles Compl. 1964–65	Tons Placed 1964–65
11	Rainy River, easterly to Bears Passage bridge	83.4	83.4	144.0
17	Manitoba-Ontario boundary, easterly to Ignace	184.9	184.9	478.5
71	Jct. Hwy. 17 (at Longbow Corners), southerly to Jct. Hwy. 11	96.6	96.6	821.3
72	Jct. Hwy. 17 (Dinorwic), northerly to Sioux Lookout	43.0	43.0	40.5
105	Jct. Hwy. 17 (Vermilion Bay), northerly to Red Lake	78.9	78.9	418.5
128	Kenora north limits, northerly to Redditt	6.0	6.0	213.0
596	Keewatin north limits, northwesterly to Minaki	29.6	29.6	807.0
598	Jct. Hwy. 128, easterly to Jct. Secondary Hwy. 604	2.8	2.8	229.5
600	Rainy River, northeasterly to Jct. Hwy. 71	6.0	6.0	180.0
602	Emo to Fort Frances, south of Hwy. 11	10.0	10.0	48.0
604	Kenora east limits, northeasterly to Kenora Airport	5.2	5.2	166.5
621	Jct. Hwy. 11 (at Sleeman), northerly to Lake of the Woods	32.9	32.9	682.5
641	Jct. Hwy. 17, northerly, to Jct. Secondary Hwy. 596	9.8	9.8	429.0
	Totals	589.1	589.1	4,658.3

Bituminous Prime on Gravel Roads

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Sand Used 1964–65	Tons Chips Used 1964–65	Tons 5/8" Crushed Gravel Used 1964–65
Secondary Highways						
596, 641	From Jct. Hwy. 17, northwesterly to Minaki	33	84,000	3,938	.....	.....
600	Rainy River, northerly for 6 mi.	6	15,849	210	804	.....
602	Fort Frances, westerly for 10 mi.	10	30,377	.....	.....	480
	Totals	49	130,226	4,148	804	480

Bituminous Surface Treatment

Hwy. No.	Location	Miles Compl. 1964–65	Gals. Bit. Used 1964–65	Tons Chips Used 1964–65
Secondary Highway				
604	Kenora east limits, northeasterly to the Kenora Airport	5.5	17,300	791

Bridges Built

Hwy. No.	Location	Year Begun	Opened to Traffic	Type of Structure
11	Bears Passage bridge, 21.6 mi. east of Fort Frances east limits	1963	1964	Steel and concrete reinforced concrete deck

Crushed Gravel and Stone on Roads by Contract

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
11	From 60 mi. to 72.43 mi. west of Atikokan	6.00	22,033
11	From 34.0 mi. west of Atikokan to 48.42 mi. westerly	13.84	89,808
11	From 22.83 mi. east of Rainy Lake causeway, easterly 11.84 mi.	11.00	86,118
11	From Rainy Lake causeway (5 mi. east of Fort Frances), easterly 13.74 mi.	13.74	63,141
11	From 10.4 mi. east of Rainy Lake causeway, easterly for 12.43 mi.	12.43	7,639
17	From Blackwater Creek, 10.4 mi. east of Dryden, westerly 19.31 mi., including work in Dryden (2.9 mi.), surface treatment in Aaron Park and swamp construction, 6 mi. west of Oxdrift	19.31	31,906
17	From Sixth Street in Keewatin, westerly for 9.56 mi.	9.56	90,467
17	From east entrance of Keewatin, westerly for 10.17 mi. and from Jct. of Parsons Street (Kenora), easterly 0.5 mi., plus work on Cameron Bay bridge and approaches, and padding of settlements east and west of these areas	9.60	13,881
17	Kenora, easterly 5.27 mi.	4.00	38,710
105	From 12.12 mi. south of Ear Falls, northerly 20.44 mi. and Trout River bridge deck	12.17	19,958
105	From 12 mi. south of Ear Falls, southerly 15.25 mi.	15.25	123,485
Secondary Highways			
594	From 5 mi. west of Dryden, westerly 10 mi.	5.00	1,200
602	2.0 mi. west of Big Fork, westerly 5 mi.	5.00	1,200
619	Jct. Hwy. 11 to Jct. Hwy. 621, D.H.O. crusher	25.00	20,000
	Totals	161.90	609,546

Crushed Gravel and Stone on Roads by Department's Forces

Hwy. No.	Location	Total Miles 1964–65	Tons Placed 1964–65
17 T.C.	Manitoba-Ontario boundary to west limits of Ignace	184.90	9,998
71	Longbow Corners, southerly to Jct. Hwy. 11	96.60	766
72	Jct. Hwy. 17, northerly 43 mi.	43.00	3,172
105	From Jct. Hwy. 17, northerly 108.9 mi. to Jct. Hwy. 618 (Red Lake)	108.90	2,620
116	From Jct. Hwy. 72 (Patricia Corners), westerly 10 mi. to Hudson	10.00	828
119	From Jct. Hwy. 17, northerly to Richan	13.01	56
125	Jct. Hwy. 105, northerly to Cochenour	9.00	158
128	Kenora north limits, northerly to Redditt	18.60	630
Secondary Highways			
594	From 5 mi. to 10 mi. west of Dryden	5.00	1,820
596	Keewatin north limits, northwesterly to Minaki	32.40	768
598	From Secondary Road 604, westerly to Hwy. 128	2.80	209
600	Jct. Hwy. 71, westerly to Rainy River	59.00	4,958
601	5 mi. north of Hwy. 17, westerly 16.01 mi.	16.01	3,966
602	Sections of Secondary Hwy. 602, 3 mi. east of Big Fork, westerly 5 mi.	5.00	4,706
603	From Jct. Hwy. 17, northwesterly to Dyment	2.90	45
604	East limits of Kenora, easterly to Kenora Airport	5.20	227
605	Jct. Hwy. 17, northerly to end of road	7.55	693
609	Jct. Hwy. 105, northwesterly to Clay Lake	10.10	168
611	Jct. Secondary Hwy. 602, northerly to end of road	12.70	894
613	Jct. Hwy. 11, northerly 4 mi.	4.00	2,603
615	Jct. Hwy. 71, northeasterly to Burditt Lake	12.50	333
617	Jct. Hwy. 11 at Stratton, northerly to North Branch	14.40	1,070
618	From Jct. Hwy. 105 at Red Lake, westerly to Starratt Olson Mine	7.20	149
619	From Jct. Hwy. 11 at Pinewood, northerly to Jct. Secondary Hwy. 621	25.03	15,997
641	Hwy. 17, west of Kenora, northerly to Jct. Secondary Hwy. 596	9.80	990
642	Sioux Lookout, easterly to Alcona	11.00	516
647	Jct. Hwy. 17, northerly to Blue Lake (Lands and Forests Park)	5.03	497
659	Jct. Secondary Hwy. 604, northwesterly to Jct. Hwy. 128	11.03	480
	Totals	747.66	59,317

Grading and Culverts

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65
11	From 60.0 mi. to 72.43 mi. west of Atikokan	12.43	1964	.....	12.43
11	From 34.0 mi. west of Atikokan to 48.42 mi. westerly	14.42	1963	.....	13.84
11	From 22.83 mi. east of Rainy Lake causeway, easterly 11.84 mi.	11.84	1963	.....	11.00
17 T.C.	From Sixth Street in Keewatin, westerly 9.56 mi.	9.56	1963	2.10	7.46
17 T.C.	Kenora, easterly 5.27 mi.	5.27	1964	.....	4.00
105	From 12 mi. south of Ear Falls, southerly 15.25 mi.	15.25	1963	12.40	2.85
	Totals	68.77		14.50	51.58

Granular Base on New Grading

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. Previous Years	Miles Compl. 1964–65	Tons Placed 1964–65
11	From Rainy Lake causeway (5 mi. east of Fort Frances), easterly 13.74 mi.	13.74	1963	.....	13.74	63,141
11	From 10.4 mi. east of Rainy Lake causeway, easterly 12.43 mi.	12.43	1962	12.43	.....	7,639
11	From 60.0 mi. to 72.43 mi. west of Atikokan	12.43	1964	....	6.00	141,965
11	From 34.0 mi. west of Atikokan to 48.42 mi. westerly	14.42	1963	.....	13.84	534,706
11	From 22.83 mi. east of Rainy Lake causeway, easterly 11.84 mi.	11.84	1963	.....	11.00	390,930
17 T.C.	From Blackwater Creek, 10.4 mi. east of Dryden, westerly 19.31 mi., including work in Dryden (2.9 mi.), surface treatment in Aaron Park and swamp construction 6 mi. west of Oxdrift	19.31	1963	2.90	16.41	127,109
17 T.C.	From Sixth Street in Keewatin, westerly 9.56 mi.	9.56	1963	2.10	7.46	319,472
17 T.C.	From east entrance of Keewatin, westerly 10.17 mi., and from Jct. of Parsons Street (Kenora), easterly 0.5 mi., plus work on Cameron Bay bridge and approaches, and padding of settlements east and west of these areas	11.56	1964	.....	7.46	13,914
17 T.C.	Kenora, easterly 5.27 mi.	5.27	1964	.....	4.00	87,668
105	From 12.12 mi. south of Ear Falls, northerly 20.44 mi. and Trout River bridge deck	20.63	1964	.....	12.17	19,958
105	From 12 mi. south of Ear Falls, southerly 15.25 mi.	15.25	1963	12.40	2.85	583,339
	Totals	146.44		29.83	87.47	2,289,841

Granular Base Where No Grading Done

Hwy. No.	Location	Total Miles	Work Begun	Miles Compl. 1964–65	Tons Placed 1964–65
71	Reed Narrows bridge, 4.6 mi. north of Sioux Narrows (north approach)	.....	1963	.....	1,875
Secondary Highways					
594	From 5 mi. west of Dryden, westerly 10 mi.	5.00	1964	5.00	46,610
601	5 mi. north of Hwy. 17, westerly 4 mi.	4.00	1964	4.00	25,920
602	2.0 mi. west of Big Fork, westerly 5 mi.	5.00	1964	5.00	23,321
605	From Jct. Hwy. 17, northerly 7 mi.	7.00	1964	7.00	6,176
613	From Jct. Hwy. 11, northerly 4 mi.	4.00	1964	4.00	3,803
619	Jct. Hwy. 11 to Jct. Hwy. 621	25.00	1964	25.00	20,000
	Totals	50.00		50.00	127,705

New Buildings

Hwy. No.	Location	Type of Building	Begun	Completed
105	Redvers yard, .06 of a mile north of Red Lake Road station	Standard salt shed	1964	1965
105	Redvers yard, .06 of a mile north of Red Lake Road station	Heated equipment storage	1964	1965
71	South Narrow Lake, approximately 8 mi. north of Nestor Falls	Addition to patrol house	1964	1964
17	Ely Lake, approximately .04 of a mi. west of Vermilion Bay	Standard salt shed	1964	1965
17	Laclu patrol yard, approximately 1 mi. west of Jct. Hwy. 17 and Secondary Hwy. 641	Standard salt shed	1964	1965
17	Laclu patrol yard, approximately 1 mi. west of Jct. Hwy. 17 and Secondary Hwy. 641	Heated equipment storage	1964	1965
17	Hwy. 17, approximately 19 mi. east of Dryden at Dinorwic	Standard salt shed	1964	1965

Totals of Other Work Done

Item	Total Number	Total Tons	Total Miles
Bridges painted	12	.....	.....
Calcium dust layer on gravel roads	.....	1,710	72.31
Development roads built	1	.....	4.5
Off-road parks maintained	9	.....	.....
Roads snowploughed and kept open, King's highways	.....	.....	782.06
Roads snowploughed and kept open, secondary highways	.....	.....	22.27
Roadside picnic places maintained	64	.....	.....
Routine maintenance, King's highways	.....	.....	782.06
Routine maintenance, secondary highways	.....	.....	22.27
Salt for de-icing roads (raw)	.....	14,072	.....
Salt in sand, stockpiled	.....	2,619	.....
Sand for winter maintenance	.....	49,984	.....
Scale houses maintained	4	.....	.....
Seeding by department's forces (acres)	395.41	.....	.....
Shrubs received and planted this year	12,652	.....	.....
Signs erected or replaced	2,892	.....	.....
Snow fence erected, dismantled, stored	.....	.....	31.46
Weed control (gals.)	1,303	.....	991.5
Zone painting on King's highways (gals.)	11,492.44	.....	1,002.8
Zone painting on secondary highways (gals.)	1,273.56	.....	13.0

PERSONNEL BRANCH

J. POGUE, Director

The Personnel Branch administers recruitment and placement of staff, staff transfers and promotions, training, organization and classification, personnel records, staff establishment of branches, the departmental safety program and the Public Service Superannuation Act. It is the branch responsible for the administration of the Public Service Act, and Regulations, within the department, and it is responsible for the administration of similar departmental policies and procedures affecting the unclassified staff.

The branch publishes a personnel manual, supplied to the supervisor of each major unit of organization, containing information on both Department of Civil Service and Department of Highways policies and procedures. An accompanying manual, also published by the Personnel Branch, contains all published class specifications utilized by the department.

These publications are augmented as the need arises by circulars, published over the signature of the Deputy Minister, detailing such matters as new salary rates, changes in personnel procedures or policies and other matters of related supervisory and employee interest. These circulars are widely distributed to both major and minor organizational units for display on bulletin boards, so that employees may be made aware of all new developments as soon as possible.

All employee grievances made under the Public Service Grievance Procedure are reported by supervisors to the Personnel Branch, to ensure that prompt action may be taken where necessary.

Should the grievance reach the stage of a hearing before the Public Service Grievance Board or before a Classification Rating Committee designated by the Chairman of the Civil Service Commission, the departmental viewpoint is presented by a member of the Personnel Branch staff.

RECRUITMENT SECTION

Employment requirements are determined by the Recruitment Section after consultation with branch heads and district engineers. The recruitment and selection program is then carried out. This section also arranges transfers of staff within the department and also transfers to and from other departments.

From April 1, 1964 to March 31, 1965 there were 8360 replacements and additions to staff. This figure includes 6407 seasonal workers and 867 students.

The Recruitment Section hired 588 persons, the remainder of those hired being recruited locally by the district offices. The staff engaged by the Recruitment Section was allocated as follows:

Administration Branch	26
Design Branch	82
Financial Comptroller's Branch	32
Operations Branch	217
Personnel Branch	14
Planning Branch	28

Services Branch	163
Electronic Computing Branch	21
Legal Branch	5
TOTAL	588

Interviews were conducted with applicants seeking employment at the Downsview offices as well as with final year students at all Ontario Universities graduating Civil Engineers. In addition the staff of the Recruitment Section performed a counselling service for employees seeking change in their place of employment.

Competition letters were circulated throughout the department describing senior positions as they became vacant, and inviting qualified members of the staff to apply.

RECORDS SECTION

The Records Section is responsible for the proper documentation recording and filing of all employee transactions and for ensuring that prescribed procedures are followed in all transactions.

The section is also responsible for maintaining employee anniversary merit increase dates, from which eligibility for merit increases for all employees of the department is determined. In addition to being responsible for maintaining these records on punched cards, this section prepares merit increase lists for certification by the Deputy Minister, authorizing salary increases. It is also required to prepare lists for signature by the Deputy Minister for salary increases occasioned by Salary Schedule Amendments which have been authorized by Order-in-Council and published by the Department of Civil Service.

At the end of each quarter a report is prepared showing the numbers and the amounts of the accelerated merit increases granted by the Deputy Minister to members of this department which is submitted to the Secretary of the Treasury Board by the Deputy Minister. At the end of each fiscal year a recommendation to Council is prepared showing the total numbers and amounts of the accelerated merit increases granted during the year, to be presented by the Minister to the Lieutenant-Governor in Council.

All enquiries concerning benefits under the Public Service Superannuation Act are referred to this section, as are questions connected with attendance and vacation credits.

The position inventory for the entire department is maintained by this section, being documented on the personnel files and on punched cards. This amounted to approximately 24,327 transactions in addition to those mentioned below.

At the end of the fiscal year the department's work force was 13,080, which was distributed as follows:

	1964-65	1963-64	1962-63
Deputy Minister's and Administration Branch	296	302	303
Financial Comptroller's Branch	291	279	255
Services Branch	1,160	1,191	1,248
Planning Branch	356	350	.....
Design Branch	750	744	.....
Operations Branch	10,148	9,830	9,570

Personnel Branch	55	58	
* Legal Branch	24		
# Planning and Design Branch			1,075
TOTALS	13,080	12,754	12,503

* This figure was formerly included in Deputy Minister's and Administration Branch.
This figure is now divided into two separate branches, as indicated above.

The total work force of 13,080 includes salaried and hourly-rated personnel and is grouped as follows:

	1964-65	1963-64	1962-63
Regular and probationary staff	8,735	7,860	6,757
Monthly-rated casual staff	733	1,540	
Hourly-rated casual staff	562	765	
Seasonal staff (monthly and hourly)	3,050	2,589	
* Casual staff (monthly and hourly)			4,904
* Labourers (hourly)			842
TOTALS	13,080	12,754	12,503

* These figures are now included in items 2, 3, and 4 above.

By occupation the employees are grouped as follows:

	1964-65	1963-64	1963-62
Clerical and stenographers	2,055	2,020	2,010
Graduate engineers	359	374	375
Engineer's Assistants	2,173	2,300	2,287
Draftsmen	611	607	633
* Skilled and unskilled labour			5,870
Others	1,364	1,312	1,328
Equipment operators	2,828	2,748	
Automotive mechanics and foremen	457	457	
Skilled labour	585	640	
Unskilled labour	2,648	2,296	
TOTALS	13,080	12,754	12,503

* This figure is now divided into the last four classifications.

During the year 34,842 personnel transactions were carried out by the Personnel Branch as follows:

New appointments	8,360
Terminations	8,033
# Salary and other changes	18,449

* This figure includes 6,407 seasonal help and 867 summer students.
This figure includes general salary revisions to certain classes among which were Engineer's assistants, equipment operators and computer operators.

ORGANIZATION AND CLASSIFICATION SECTION

This section is responsible for the administration, throughout the department, of the classification and salary plan established by the Department of Civil Service. It is responsible for the development and administration of a similar departmental program governing the unclassified employees who are not subject to the Public Service Act.

It is also responsible for the program of appointments to the regular staff of probationary and unclassified employees.

The section also provides, through its regional and branch representatives, advice and guidance to both supervisors and employees on a wide range of matters, such as interpretation of the Public Service Act and Regulations and the provision of counselling to individual employees where their problems are of such a nature that their supervisors are unable to assist them.

The regional representatives are also responsible for conducting saftey inspections of premises and of field operations being carried out by department employees.

The program initiated under the Ontario Civil Service Reclassification Plan was continued, and the branch and regional personnel representatives continued to provide advice and guidance to supervisors in the field of position specification writing. The usual organizational changes, which occur in a department of this size, necessitated the review and re-writing of many position specifications and the redrawing of a number of organization charts.

The personnel representatives also conducted desk audits of a number of positions, where the responsible supervisor or the incumbent of the position had expressed doubts concerning the correctness of the class to which the position had been assigned, in order to ensure that a factual description had been submitted to the Department of Civil Service for classification allocation.

As a result of a program initiated by the Department of Civil Service, every position in the department was assigned a new code number. This entailed the preparation of revised organization charts, and the opportunity was taken to prepare, in conjunction with the Operations Branch, a standard district organization chart to which all districts were required to conform.

A review was made of the duties performed by Highway Equipment Operators, and, as a result of changes recommended to and approved by the Civil Service Commission, the positions of a number of employees in this group were reassigned to higher level classes.

The positions of certain mechanical staff employed at sub-garages were also reclassified upwards as a result of a departmental review and recommendation, and new classes were established for cable ferry operators.

A review of the salary relationship between the various levels of Inspectors of Signs and Building Permits was also conducted, and recommendations were made to the Department of Civil Service.

During the period under review, a merit wage progression was established, providing for the awarding of annual merit increases to continuously-employed hourly-rated labourers, who had hitherto received a single hourly wage, regardless of length of service.

Other classifications were established by the Civil Service Commission during the period under review, such as Buildings Cleaner and Helper, Clerks Supply, Operator Bookkeeping Machine and others, which necessitated the reclassification of a number of employees, and the processing of a large number of salary revisions for employees in other classes for which new salary ranges were established.

A concerted effort was made, in conjunction with senior staff of the Operations Branch, to complete the preparation of position specifications for all district positions, and generic position specifications were accordingly prepared and issued to districts as guides.

New class structures were developed and introduced into the Electronic Computing Branch and into the Reproduction Unit of the Services Branch as a result of joint studies carried out by the Department of Civil Service, the Personnel Branch and the other branches concerned.

A major development was the establishment in the Department of a Research Branch, which necessitated the preparation of a recommendation to the Department of Civil Service for the establishment of a new class structure as no current class series appeared to be appropriate.

Other re-organization within the department brought the usual new or revised position specifications and organization charts in its train, necessitating the allocation or re-allocation of numerous positions to appropriate classes.

Work units involved included the Physical and Chemical Laboratories, the Electrical and the Arboricultural Sections of the department, to name but a few.

The usual large volume of merit increases of salary, promotions, demotions and other related transactions was processed.

TRAINING SECTION

This section is responsible for establishing and maintaining training courses as required to maintain and improve the efficiency of department operations.

Training courses were held at the Training Centre at Downsview during the fall and winter months when the reduced construction program enabled employees to attend.

Courses were conducted as follows:

Branch	Number of Courses		Number of Candidates Attending	
	1963-64	1964-65	1963-64	1964-65
Services	35	39	308	274
Operations	14	26	351	605
Planning	5	3	121	13
Design	9	10	98	150
Personnel	20	3	73*	52*
Totals	83	81	951	1,094

* Safety training not included.

These courses provided instruction in a wide variety of department activities, such as: construction surveying, design surveying, land surveying, drafting, estimating, inspection, automotive mechanics, aerial photograph interpretation, critical path planning and administration. Seventy-five per cent of the candidates writing examinations in connection with these courses were successful.

In addition to courses, qualifying examinations were conducted as follows:

Branch	Number of Examinations		Number of Candidates	
	1963-64	1964-65	1963-64	1964-65
Services	16	14	136	151
Operations	7	8	274	283
Design	2	2	33	42
Totals	25	24	443	476

These examinations were written by employees to qualify for promotion to Mechanic 2, Property Agents, Property Negotiators, Draftsman 1, Draftsman 2, Survey Technician 2, Engineer's Assistant 2, District Accountant, Section Head, Sign Painter Improver, Sign Painter Journeyman, Landscape Crewman and Highway Inspection Assistant 2. Sixty-two per cent of the candidates were successful.

In addition to technical job training the Personnel Branch Safety Section conducts a regular program of safety instruction. The Safety Section conducted 28 courses in the districts which were attended by a total of 2,769 employees.

Three courses were conducted by the Materials and Testing Division for inspectors from the municipalities of the Province. Two Junior courses and a Senior Soils course were held with a total of 70 municipal employees attending.

Services Branch's Mobile Training Unit visited each of the eighteen districts and courses were held for Mechanics, to upgrade their qualifications and keep them abreast of current developments in the mechanical repair trade.

The Training Section is also responsible under the direction of the Training Committee, for the Engineers-in-Training Program. Selected junior professional engineers undergo a systematic job rotation program to prepare them for future administrative positions by giving them a broad knowledge of all the department's operations. The eighth program was completed by six engineers in March, 1965.

Fifty-seven employees were assisted either financially or through the granting of leaves of absence to attend courses conducted by outside agencies. This type of training is approved when it is not feasible to provide the training by in-service means and it is considered essential or beneficial to the department's operations that specific employees should acquire special skills or knowledge.

Eighty-two employees took St. John Ambulance courses in the fundamentals of first aid and qualified for certificates.

A total of 4,478 employees participated in the various training activities conducted from April 1, 1964 to March 31, 1965.

DEPARTMENTAL COUNCIL SYSTEM

The Departmental Council convened for eleven meetings in the period from April 1, 1964 to March 31, 1965. The Departmental Council arranged a two-day conference at which the chairmen of the department's twenty-eight branch councils attended. At this conference government regulations, policies, classifications, rates-of-pay, etc., were reviewed and a general discussion was held on many subjects of interest to the employees.

The annual election of employee representative(s) to the Departmental and Branch Councils was conducted in accordance with regulations made under the Public Service Act. The Minister of Highways approved the appointment of his representatives to both the Departmental and Branch Councils.

The interest shown by the Minister, Deputy Minister, Branch Heads and District Engineers in the Council System made its operation a very active and successful one.

SAFETY SECTION

The Safety Section, through the Director of Personnel, is responsible for the provision of safety training and accident prevention material to department employees.

In a program designed to further improve the department's safety record, the policy of visiting districts or branches on an annual basis was reviewed, and it was decided to step up the frequency of these visits to twice per year.

As a result, it was possible to increase the number of employees receiving accident prevention lectures from 1900 in the fiscal year 1963-64, to 3,041 employees in the year under review. Of this number, 2,722 received instruction in their respective districts, whilst 319 attended courses at the departmental training school at Downsview.

Amongst those receiving safety instruction were patrolmen, foremen, mechanics, equipment instructors, labourers, equipment operators, survey, inspection and other construction personnel and other groups of the regional and district staffs.

The program of production and distribution of safety posters designed within the department was continued, many of these being directed towards the elimination of accidents which experience had indicated would occur on a seasonal basis. Articles were also prepared for publication in the "D.H.O. News", the departmental employee publication.

In addition to the normal safety training provided to employees, a two-day course "Fundamentals of First Aid" was provided to 82 employees by the St. John Ambulance. Those qualifying received certificates of proficiency.

The usual annual Safe and Skilled Driving Competitions (Roadeo) were held with all districts participating, the finals for district winners being conducted at Downsview, with prizes being awarded at a function held at the completion of the Roadeo.

1,536 Equipment Operators entered in the Ontario Safety League Safe Driver Award Program received awards for the calendar year 1964-65, a figure which has risen from 741 in 1955, which indicates a marked improvement in safety consciousness on the part of our operators.

In the Safety Search Contest of the Ontario Motor Vehicle Safety Association two department employees were winners, one obtaining a third prize and the other a consolation prize. Since 1957, a total of twenty prizes has been won by employees of this department.

The following tables summarize the department's industrial and motor vehicle accident experience:

Industrial Accidents:	Fiscal Year 1963-64	Fiscal Year 1964-65
Total hours worked	25,556,884	25,241,824
Number of lost time accidents	627	634
Days lost as result of accidents	24,195	53,531
Frequency rate	24.53	25.12
Severity rate	946.71	2,120.72
Industrial injury costs (factual)	$385,071.05	$402,566.87

Fiscal 1964-65	$402,566.87
Fiscal 1963-64	$385,071.05
Increase of	$ 17,495.82

Combined Factual and Concealed Costs:

Fiscal 1964-65	$402,566.87	$1,610,267.48	$2,012,834.35
Fiscal 1963-64	$385,071.05	$1,540,284.20	$1,925,355.25
Increase of	$ 17,495.82	$ 69,983.28	$ 87,479.10

Motor Vehicle Accidents:

	Fiscal Year 1963-64	Fiscal Year 1964-65
Responsible motor vehicle accidents	168	164
Miles travelled	34,332,195	34,571,953
Frequency rate per 100,000 miles of travel	0.49	0.47
Responsible hourly-rated equipment accidents	39	29
Miles travelled	3,066,605	3,064,840
Frequency rate per 100,000 miles of travel	1.27	0.95
Total responsible accidents for both types of equipment	207	193

For the first time since 1959, there has been a slight increase in the frequency of industrial lost time injuries. from 24.53 in the year 1963-64 to 25.12 in the year 1964-65.

However, for the same periods, there was a reduction in the frequency rate for mileage vehicles, from 0.49 to 0.47, and on hourly-rated equipment, a reduction from 1.27 to 0.95, for each 1,000,000 miles travelled.

PLANNING BRANCH

W. BIDELL, P.Eng., Director of Planning

TRAFFIC AND PLANNING STUDIES DIVISION

W. Q. Macnee, P.Eng., Traffic Planning Studies Engineer

PLANNING STUDIES SECTION

The work of the Planning Studies Section is subdivided into Area Traffic Planning Studies, Urban Transportation Studies, and Specific Studies. The work carried out within each group is described as follows:

AREA TRAFFIC PLANNING STUDIES

To permit more intensive study of the King's Highways on a regional basis, the province has been divided into nineteen traffic planning areas. Each area will be studied thoroughly to determine both present and future road requirements. Based on a complete analysis of the traffic facts, a road network will be recommended which will be adequate throughout the twenty-year planning period. To date, eleven of these studies have been started and are in various stages of completion as described below:

(A) Niagara Peninsula Planning Study

This study, the first one to be started, was completed successfully in January, 1965, when the recommendations were presented to the public. Shortly afterwards, the study report was published and distributed to all interested organizations and individuals.

(B) Toronto Area Highway Study—Western Division

This regional study was undertaken as a joint project between the department and Damas and Smith Ltd. Through their combined efforts, a mathematical model has been developed which will simulate today's travel patterns. This model will be used to predict future travel patterns and evaluate alternate road system proposals.

(C) Toronto Area Highway Study—Northern and Eastern Section

During the past fiscal year, the traffic survey data was processed and tabulated, the road inventory data was compiled, and the social-economic statistics were recorded. This information is in acceptable format for the initial development of a traffic simulation model.

(D) Barrie-Simcoe County Highway Study

This is a study of summer weekend travel from the Metropolitan Toronto-Hamilton area into and through the region surrounding Lake Simcoe. It is unique in that it is primarily a study of weekend recreational travel to summer cottages, resorts, camp grounds, and public parks. To determine weekend travel patterns, 15,000 households were interviewed by telephone during the summer of 1964. This information is being processed and tabulated as the first step in the development of a traffic simulation model.

(E) Eastern Ontario Planning Study

Analysis of the traffic data, including prediction of future travel and distribution of these trips on the road network, was completed. Alternate proposals were investigated, and a recommended highway network for the area was developed. Public presentation of this study is planned for October, 1965, with publication of the report shortly afterwards.

(f) London Area Planning Study

Progress of this study has duplicated that of the previous one. Analysis was completed and the preliminary recommendations were developed during this period. Following the public presentation, also planned for October, 1965, the report will be published.

(g) South Western Ontario Planning Study

This study, which includes the Counties of Essex, Kent, and Lambton, was started in the spring of 1964. Roadside origin destination surveys were carried out during the summer of 1964. During the remainder of the period, this survey data was processed and tabulated, road inventory data was recorded, and simulation of existing travel patterns was completed.

(h) Brantford Area Planning Study

This study was also started in 1964 with the origin-destination surveys being completed during the summer. Processing of this information, and the collection of road inventory and social economic data were also completed.

(i) Ottawa Valley Route Study

Although included with the area studies, this study is restricted to an investigation of Highway 17 between Arnprior and North Bay. Roadside origin-destination surveys were completed during the summer of 1964 and the processing and analysis of this information has been started.

(j) Kingston-Belleville Area Planning Study

This study was started in 1965. Preliminary planning for the work, including the selection of the exact limits of the study area and the delineation of traffic zones for data collection purposes, was completed. Field surveys are planned for the summer of 1965.

(k) Peterborough Area Planning Study

As above, this study was started in 1965. Similar preliminary work was carried out during this period in preparation for data collection during the summer of 1965.

URBAN TRANSPORTATION STUDIES

The Planning Studies Section provides the liaison between the department and municipalities which have retained consultants to carry out urban transportation studies. During this fiscal year studies have been completed in Brantford, Brockville, Cornwall, Kingston, and Smiths Falls. Only one new study, in Wallaceburg, was started during this period. Still in progress were the studies in Brampton, Burlington-Oakville. Galt-Preston, London, Midland, Ottawa, St. Catharines, Stratford, Sudbury, and Welland.

SPECIFIC STUDIES

Specific requests for traffic information from other sections of the department are answered by the Planning Studies Section. During this fiscal year 197 such requests were received. A total of 160 replies were completed during this period, most of which concerned existing and predicted turning movement volumes at intersections.

TRAFFIC CHARACTERISTICS

In 1964 completed specified requests for traffic data totalled 1,175. 554 requests for volume data, 524 for accident data, 39 for O-D data and 58 for speed data. Many of these requests were greatly increased in scope and content, especially those in connection with area studies. In addition, numerous incidental requests for data were answered.

The number of permanent counting stations was reduced from 29 to 28 with the forced closing down of the Woodbine station on Highway 401. Several semi-permanent (i.e. for the duration of the summer) counters were operated at various locations throughout the province to provide supplementary data.

The one-year county road counting program, by contract, was brought to its conclusion and the resulting computed A.A.D.T.'s placed in the hands of the Municipal Roads Branch. In addition, a booklet containing the results, as well as the results of the 1957 study, was prepared and released for publication.

Starting on July 1 in the southern portion of the province and on January 1 in the northern portion of the province, all but a few of the routine highway traffic counts were let to contract, thus releasing department field staff for other duties. Despite this, the department had to decline to participate in the annual Metropolitan Toronto cordon count due to pressure of other work.

Some 260,000 O-D interviews were processed, and a further 9,000 obtained by consulting engineers were checked. The smi-annual vehicle classification counts, taken by the various maintenance patrol men, were received as usual. More accident data was transcribed to punched cards and a start was made on doing the same type of thing with the accident reports on secondary highways.

The monthly PCS reports and fatal accident reports, and the semi-annual county road accident reports were produced as usual. Also published during the year were the second Combined Volume and Accident Data Book, the second Public Volume Booklet and the second Annual PCS Report, the latter in a revised format. Work on the third Combined Book and Public Booklet was well under way at the end of the year.

An investigation into the installation of loop-type detectors, especially on the Toronto By-pass portion of Highway 401, was started, but responsibility for this, for the field servicing of the PCS and for the field supervision of the O-D surveys passed to the Control Sub-section at the end of 1964.

TRAFFIC CONTROL

The regionalization of the Traffic Control Section was completed in 1964. Subsections are now located in Toronto, Kingston, London and North Bay. North-Western Region traffic control problems are covered, as heretofore, by an analyst, seconded to the Assistant Planning Engineer, North-Western Region.

The summary of the studies and field surveys as follows:

STUDIES COMPLETED

	CENTRAL	NORTHERN	S.-WEST	EASTERN	TOTAL
Intersection studies	77	13	22	6	118
Speed zoning	12	29	22	7	70
Sign layouts	33	42	33	44	152
Signal studies	29	4	10	1	44
Illumination	49	13	15	24	101
Others	185	18	82	53	338
TOTALS	385	119	184	135	823
Municipal meetings	35	31	9	20	85
Other meetings	20	5	32	6	63
TOTALS	45	36	41	26	148

Field Work

	Central	Northern	S.-West	Eastern	Total
Turning movements	218	99	127	178	622
Vehicle classification counts	218	.....	.....	17	235
Routine counts	1,221	642	.....	397	2,260
Special counts	.....	366	1,866	.....	2,232
Pedestrian counts	7	.....	.....	.....	7
Speed studies	40 mi.	536 mi.	70 mi.	186 mi.	832 mi.
Licence plate traces	4	.....	.....	1	5
Ball bank	.....	.....	.....	1	1
Speed and delay	.....	.....	.....	1	1
Stop sign observance	.....	.....	.....	10	10
Miscellaneous	.....	71	.....	.....	71

Apart from the normal duties performed by the Head Office unit, the department's guide signing policy was revised and incorporated in a new policy manual for traffic control devices.

HIGHWAY SAFETY

The 1964 total deaths on roads in Ontario increased by three in spite of the fact that the motor vehicle registration increased 5% and the number of licensed drivers in Ontario by 5.5%.

The 1964 accident rate for all Ontario was 5.3, based on the number of reportable accidents for every million vehicle miles of travel. The rate for the King's Highways (excluding secondary) was 2.5, a slight increase over the 2.3 rate for 1963 but nevertheless encouraging when it is realized that the 9,700 miles of the King's Highways carried 45% of the total vehicle miles travelled in the province. Motorists using 700 miles of controlled-access highways accounted for 15% of the 1964 total of 20,900 billion miles travelled. The accident rate of 1.7 for these highways compared with 5.3 for all highways, roads and streets in the province. Fatal accidents on all King's Highways totalled 548, a decrease of 5.0% over the 1963 total of 577. The fatal accident rate on these highways was 3.3 while the fatality rate was 4.2, both rates based on one hundred million vehicle miles of travel. "Drinking drivers and/or pedestrians" were involved in 39% of all fatal accidents on the King's Highways. Fatal accidents involving a "single vehicle" only, accounted for 26% of the King's Highway total. Pedestrian accidents resulted in 91 deaths, 32 of them involving persons who had been drinking. In every case, the "drinking" pedestrian was killed during hours of darkness.

During the fiscal year 1964–65, the Department of Highways conducted 27 traffic seminars in 12 Ontario Provincial Police Districts. These seminars held in Eastern and Southern Ontario and as far north as Cochrane, had 727 officers and constables in attendance while our regional and district offices were well represented at each seminar. Also in attendance at these meetings were chief constables or senior officers from municipal police departments and county engineers or their assistants. Informal discussions with the various enforcement agencies resulted in many studies being carried out on the King's Highways, at locations considered "accident prone" or where certain driving hazards existed.

The Office of the Supervising Coroner for Ontario forwarded 71 Coroner's Inquest Reports to the department during the fiscal year. These reports had reference to the recommendations of coroner's juries, made at inquests into fatal motor vehicle traffic accidents occurring on the King's Highways. The department considered the findings and recommendations of the juries, and reports were prepared and forwarded to the Supervising Coroner.

	1963	1964	
Traffic deaths in Ontario	1,421	1,424	+3
Traffic accidents in Ontario	104,919	111,232	+6,313
(Dept. of Transport Ontario)	($55½ million property damage)		
Persons injured in Ontario	47,801	54,560	+6,759
(Dept. of Transport Ontario)			
Traffic deaths in Canada	4,210	4,655	+10.6%
(Dominion Bureau of Statistics)			
Persons injured in Canada	126,086	139,576	+13,490
(Dominion Bureau of Statistics)			
Accidents with property damage in excess of $100	248,395	266,233	+17,838
Traffic deaths in the United States	43,564	47,800	+10%
Motor vehicle registration in Ontario	2,262,826	2,375,558	+5%
Licensed drivers in Ontario	2,552,803	2,694,023	+5.5%
King's Highway accidents	(20.6% of provincial total)	22,900	
(exclusive of secondary)			
Total vehicle miles travelled in Ontario	20.299 billion	20.939 billion	+3.1%

FUNCTIONAL PLANNING DIVISION

I. C. Campbell, P.Eng., Functional Planning Engineer

The Functional Planning Division operated on a completely regionalized basis during the period April 1, 1964 to March 31, 1965, with offices in Toronto, London, Kingston and North Bay. The output of Functional Planning Reports, the main function of this division, has steadily increased as can be seen in the following table:

FUNCTIONAL PLANNING REPORTS

	COMPLETED	IN PROGRESS
1962–63	7	39
1963–64	28	87
1964–65	51	90

This year marked the first use of consultants in the preparation of these reports, with 20 projects issued to consultants who were directly responsible to the Regional Functional Planning Engineer. Their work follows the same routine as laid down in the flow chart with each project being presented at a field meeting to representatives of the Road Design Division, the Bridge Planning Office, the Materials and Testing Division and the district involved. The proposals are then reviewed by Head Office Functional Planning; presented to the local municipal officials and finally the report is published.

HEAD OFFICE FUNCTIONAL PLANNING SECTION

P. J. Harvey, P.Eng., Functional Planning Engineer

This section of the Functional Planning Division has three main functions. It is responsible for reviewing the work of the four regions, it prepares design drawings of all channelizations and interchanges and it records and reviews property requests, property sales and subdivision plans affecting the Planning Branch.

A particular duty which became necessary during this year was the review of permit applications affecting controlled-access highways. On this same subject, a manual on commercial site access standards was prepared and issued by this section.

A summary of the work processed by the Head Office Functional Planning Section and compared with the previous year is shown in the following tables:

	1963–64	1964–65
PROJECT GROUPS (2)		
Functional reports issued	28	51
Functional reports reviewed	35	53
Functional reports prepared	2	1
Functional reports in preparation	2	1
Preliminary functional reports reviewed	75	96
Miscellaneous reports prepared	6	29
Miscellaneous reports in preparation	.....	.....
Work projects reviewed (including structures)	132	134
Non-work projects reviewed	61	40
Design criteria prepared	6	.....
Design criteria reviewed	97	179
Assumptions, designations, reversions and C.A.H. criteria	108	102
Permit applications reviewed	.....	502
Property sales reviewed	.....	338
INTERSECTION DESIGN GROUP		
Interchanges	60	46
Channelizations	82	93
Truck climbing lane designs	2	2
Minor intersections	10	.....
Miscellaneous projects	40	56
Service centres	2	9
RIGHT-OF-WAY GROUP		
PROPERTY REQUESTS		
Plotted and reviewed	500	610
Initiated or approved	285	165
PROPERTY SALES	1,115	480
PLANS OF SUBDIVISIONS		
Plotted	550	600
Reviewed	125	190
Description reference plans	40	50
Official plans	8	20
Amendments	60	75
BUILDING PERMIT APPLICATIONS		
Referenced on plans	.....	190

CENTRAL REGIONAL FUNCTIONAL PLANNING SUBSECTION

R. G. Burnfield, P.Eng., Regional Functional Planning Engineer

During the past fiscal year, the following major functional planning reports were completed and distributed:

DISTRICT 4, HAMILTON — The two tunnels under the Welland Canal at Carlton Street in St. Catharines and in Thorold.

DISTRICT 6, TORONTO — Highway 122 from the Q.E.W. southerly to Highway 2.

Work continues on the preparation of the report for Highway 27 from Q.E.W. to Richview sideroad.

DISTRICT 7, PORT HOPE — C.N.R. subway on Highway 33 connecting link, town of Trenton and the C.P.R./C.N.R. overhead on Highway 2, east of Cobourg.

CONSULTANTS

During the year, two functional planning reports were completed by consultants—Development Road 683 in District 4 and Highway 50 to Highway 9 in District 6. In addition, work by consultants continued on the preparation of functional planning reports for the Queen Elizabeth Way from the Stoney Creek Traffic Cirle to Fort Erie and on the extension to the Peace Bridge.

The following table is a summary of work carried out during 1964–1965, including work by consultants:

	DISTRICTS							
	HAMILTON		TORONTO		PORT HOPE		TOTALS	
	63/64	64/65	63/64	64/65	63/64	64/65	63/64	64/65
FUNCTIONAL REPORTS								
Completed	6	6	2	4	2	2	10	12
In progress	8	12	7	8	5	12	20	32
GRADING WORK PROJECTS								
Completed	8	5	3	1	3	3	14	9
In progress	1	4	3	1	1	7	5	12
INTERCHANGES								
Completed	10	4	10	10	1	4	21	18
In progress	10	28	19	11	11	....	40	39
CHANNELIZATIONS								
Completed	7	4	17	14	17	6	41	24
In progress	....	26	8	10	6	4	14	40
STRUCTURES								
Completed	38	17	34	6	40	1	112	24
In progress	....	56	....	33	.....	3	....	92
SPECIAL STUDIES	....	....	....	4	....	6	....	10
BOARD OF TRANSPORT COMMISSION								
Completed	....	1	....	....	....	....	....	1
In progress	....	10	....	3	....	6	....	19
Handled	....	30	....	39	....	6	....	75
APPLICATIONS FOR PERMITS	....	189	....	251	....	78	320	518
ASSUMPTIONS AND DESIGNATIONS	....	9	....	5	....	5	72	19
CLOSINGS, TRANSFERS, REVERSIONS	....	9	....	11	....	12	56	32
PROPERTY REQUESTS AND SALES	....	50	....	29	....	37	658	116
SUBDIVISIONS	....	67	....	112	....	15	....	194

SOUTHWESTERN REGION FUNCTIONAL PLANNING SUBSECTION

W. R. Kinnear, P.Eng., Regional Functional Planning Engineer

This region completed a total of 552 jobs in the Chatham, London, Stratford and Owen Sound Districts.

Some of the important projects were:

Hickory Creek bridge on Highway 21
Turkey Creek bridge and approaches at La Salle on Highway 18
Highway 77, Comber to Leamington
C.N.R. subway at Eastwood
C.P.R. overhead at Woodstock

Bridge relocation at Port Burwell
Highway 23 from Mitchell to Listowel
C.P.R. overhead and associated work in Harriston
Highway 10 improvements north of Shelburne

A summarized account of the total work accomplished is as follows:

	Chatham		London		Stratford		Owen Sound		Totals	
	63/64	64/65	63/64	64/65	63/64	64/65	63/64	64/65	63/64	64/65
Functional Reports										
Completed	2	3	4	9	1	4	3	2	10	18
In progress	5	6	8	1	7	5	7	6	27	18
Grading Work Projects										
Completed	1	3	3	3	2	2	1	1	7	9
In progress	2	2	4	....	3	1	1	2	10	5
Interchanges										
Completed	2	1	....	4	....	1	....	....	2	6
In progress	1	....	3	....	2	....	....	6	6	6
Channelizations										
Completed	16	1	8	7	1	4	4	2	29	14
In progress	2	....	10	....	5	3	4	2	21	5
Structure Projects										
Completed	6	12	6	11	1	6	3	....	16	29
In progress	5	6	6	....	17	3	7	9	35	18
Non-work Projects										
Completed	2	5	5	2	2	3	1	9	10	19
In progress	....	2	1	....	1	....	3	1	5	3

	1963–64	1964–65
Applications	172	297
Assumptions and designations	11	1
Closings	8	2
Transfers and reversions	13	4
Property requests	214	45
Property sales	204	53

NORTHERN REGION FUNCTIONAL PLANNING SUBSECTION

J. A. Knowles, P.Eng., Regional Functional Planning Engineer

Of the various projects completed during the year, the following are worthy of special note:

Highway 544—The section from Gogama to Timmins was completed as the first section of the new Sudbury-Timmins Highway.

Highway 11—The widening to four lanes has been completed as far north as Gravenhurst.

Highway 17—Several projects have been completed on the section between North Bay and Pembroke in order to bring this rural arterial highway up to the required standard.

The following table is a summary of the jobs completed and in progress:

	Huntsville		North Bay		New Liskeard		Sudbury		Totals	
	63/64	64/65	63/64	64/65	63/64	64/65	63/64	64/65	63/64	64/65
Functional Reports										
Completed	2	7	....	4	....	1	1	1	3	13
In progress	6	7	8	4	1	1	2	3	17	15
Grading Work Projects										
Completed	1	2	1	3	4	12	4	5	11	22
In progress	1	....	....	6	4	1	3	....	8	7
Channelizations										
Completed	4	4	8	1	2	1	2	3	16	9
Structures										
Completed	2	7	....	3	....	3	....	7	2	20
Non-work Projects										
Completed	5	7	7	14	1	4	6	8	19	33

	1963–64	1964–65
Applications	57	212
Assumptions and designations	3	4
Property sales	257	148

EASTERN REGIONAL FUNCTIONAL PLANNING SUBSECTION

R. Gascoyne, P.Eng., Regional Functional Planning Engineer

Of the various projects considered in the Eastern Region during the past year, the following are worthy of special note:

Highway 508—Since the Hydro Electric Power Commission decided to develop a power plant at Mountain Chute on the Madawaska River, at an estimated cost of $27,700,000, it became the department's responsibility to appraise the condition of access from Renfrew to the dam site. The decision was made to reconstruct 12 miles of Highway 508 with about 7 miles of this construction on revised alignment.

Highway 17—Ottawa East—another project of particular note was the investigation to determine the feasibility and location of a proposed new highway from Ottawa to the Quebec border, with a connection to Cornwall.

A summarized account of the various works completed and in progress is as follows:

	Kingston		Ottawa		Bancroft		Totals	
	63/64	64/65	63/64	64/65	63/64	64/65	63/64	64/65
Functional Reports								
Completed	2	2	1	....	2	2	5	4
In progress	5	8	6	4	12	13	23	25
Grading Work Projects								
Completed	....	3	....	3	....	....	....	6
In progress	5	....	1	....	....	3	6	3
Interchanges								
Completed	....	3		1	....	....	....	4
In progress	5	3	1	2	....	....	6	5
Channelizations								
Completed	4	2	4	1	3	....	11	3
In progress	....	3	....	3	....	4	....	10

Structures								
Completed	....	10	2	3	....	2	2	15
In progress	8	10	1	10	....	7	9	27
Non-work Projects								
Completed	9	9	2	4	5	12	16	25
In progress	1	2	2	1	3	1	6	4
Resurfacing and Paving Projects								
Completed	....	1	....	3	....	....	....	4
In progress	....	....	....	2	....	....	....	2
Board of Transport Investigations								
Completed	....	3	....	....	....	1	....	4
In progress	....	4	....	5	....	....	....	9

	1963–64	1964–65
Property sales	179	145
Property requests	34	27
Applications	92	136
Service permits	.....	16
C.A.H. criteria	6	2
Assumptions and designations	9	7
Transfers	.....	15
Reversions	.....	2
Closings	5	8
Revocations	.....	1
Subdivisions	.....	34

PROGRAM DIVISION

W. G. Wigle, P.Eng., Program Engineer

The activities of the Program Division are summarized under the following five sections:

INVENTORY SECTION

In 1964, the highway, structure and railway crossing units of the Inventory Section continued their duties in maintaining the engineering inventory on provincial roads, structures and railway crossings. It provided up-to-date basic information used by other units in the Program Division and answered numerous requests for inventory information of all types from within and without the department.

The annual highway, structure and railway crossing inventory books were prepared and published. The mileage triangles, used in the official road maps, were checked and revised mileages included where new highways were opened to traffic. Numerous requests for point-to-point mileages from various government departments and outside sources, were also received and answered.

ADVANCE PROGRAM SECTION

This group is engaged in continuous review, revision and extension of highway construction programs for the ensuing five-year period. Highway sections, structures and level crossings are investigated to determine needs, deficiencies, and comparative priorities. Work projects, isolated or in series, are set up. Justification reports are prepared to describe deficiencies, to recommend project limits, type of work, construction year, and to provide estimates of proposed improvement values. These reports provide a basis for subsequent planning, design and scheduling of work projects.

The section is also responsible for preparing the material for the annual "Capital Construction Program", which is distributed in book form to the Legislature and communications media, at the time of budget presentation.

The section is often requested to supply data for the information of senior D.H.O. officials, which may involve search for, and analysis of, background information from many sources throughout the department. In addition, special reports, with maps and graphs, have been prepared in answer to requests by Members of Parliament, Municipalities, and Chambers of Commerce.

SCHEDULING SECTION

This section arranges the pre-contract engineering schedules for all projects on the current and advanced programs which control the flow of work from preliminary planning to contract preparation. In addition it prepares and maintains a schedule of contract award dates to ensure that capital construction expenditures are kept at the level of funds voted by the Legislature for the fiscal year. During the past year, increasing emphasis has been placed on the use of the electronic computer for the preparation of this work.

URBAN PROGRAM SECTION

This section negotiates basic connecting link agreements, special agreements, and processes construction proposals under these agreements with municipalities throughout the province.

During the past year numerous construction proposals have been received from municipalities and have been checked, processed and approved. Included in this number have been proposals integrated with the Capital Construction Program.

A five-year construction program has been established for connecting link and special agreement projects. A constant liaison is being carried out with the municipalities to amend and maintain this five-year program.

SPECIAL STUDIES SECTION

During the fiscal year 1964–65 the Special Studies Section reviewed, studied and analyzed over 500 publications (books, reports, highway statutes and policies) pertaining to various aspects of control of highway access in the U.S.A., Europe, Australia and New Zealand to obtain insight into the problems that have arisen in these jurisdictions, the solutions attempted and results accomplished—in order to evaluate present Ontario highway statutes and policies in terms of their overall effectiveness as legal instruments concerning control of highway access.

The bibliography representing a review of literature studied on control of highway access in Ontario has been prepared in a separate publication in order to assist D.H.O. staff engaged in the study of any of the various aspects of control of highway access.

A plan for action has been prepared on Ontario's Provincial Highway System regarding classes of access control, i.e. classifying the provincial highway system in four classes: freeway and expressway, arterial, collector and local highway.

This section also spent a considerable amount of time in research for requested data and information for other sections within the department and for groups outside in matters of highway revenue and other fiscal and economic factors and related statistical data pertaining to highway problems.

NORTHWESTERN REGION

H. A. Mantle, P.Eng., Asst. Planning Engineer (Northwest)

W. G. Sawyer, P.Eng., Regional Functional Planning Engineer

The Northwestern Region, situated in Port Arthur, is responsible for the functional planning work and engineering surveys and traffic studies in Algoma, Cochrane, New Liskeard, Sudbury, Kenora and Thunder Bay Districts.

The following table is a summary of the work completed and in progress:

District	Miles of Survey of Plans Plotted	Site Plans	Railway Crossing Plans
Cochrane (16)			
Secondary highways	17.1	....	....
King's highways	6.2	....	1
Sault Ste. Marie			
Secondary highways	54.1	1	1
King's highways	40.2	8	....
Fort William (19)			
Lakehead expressway	16.4	....	....
King's highways	15.5	2	....
Secondary highways	12.1	2	....
Resources and access roads	1.7	1	....
Kenora (20)			
King's highways	30.2	3	1
Totals	193.5	17	3

TRAFFIC SECTION — NORTHWEST REGION

Staff —1 analyst
1 traffic technician (E.A.3)
1 junior traffic technician (E.A.2)

Analytical studies completed—	Speed zoning (approximately 60 miles)	10
	Intersection	16
	Signing	17
	Railway crossings	17
	Illumination	6
	Others	22
	Total	88
Field work completed —24-hour inventory counts (9 months)		345
	Turning movement counts (with simple classification)	35
	Stop sign observance	2
	Road use survey (approximately 60 miles)	1
	Full classification counts	21
	Structure survey	1
	Vehicle machine counts	2
	Signing detail inventory	7
	Maintenance of permanent counting station, Nipigon	

Meetings attended —7 meetings

RESEARCH BRANCH

M. D. ARMSTRONG, P.Eng., Director of Research

Inauguration

The Research Branch was formed on July 1, 1964 to carry out research into engineering problems facing the department and the municipalities, and to co-ordinate highway research activities in other branches of the department and at Ontario universities under the Joint Highway Research Program.

The number of research projects undertaken directly by the staff of the branch is quite small but each member is closely concerned with the research aspects of co-operative work with other branches. Co-operation is especially close with the Materials and Testing Division which provides laboratory and field testing facilities, and from which several engineers and technicians have been temporarily seconded for full-time work on research projects.

Road Bases Experiment

As part of a contract for the reconstruction of 7.5 miles of Highway 10 north of Highway 7 near Brampton, 36 experimental sections will be constructed in the north-bound lanes. Most of the sections will have the same type and thickness of surfacing but five types of base materials are included and these will be laid to a range of thicknesses in conjunction with various thicknesses of granular sub-base. The arrangement of the sections, which are each 200 feet long and separated by 50-foot transitions, is shown in the diagram. The subgrade soil is a light clay and the ranges of thicknesses have been chosen so that the sections will have widely differing lives in order to accentuate the different performance characteristics of the base materials used.

The main purposes of this full-scale experiment are:

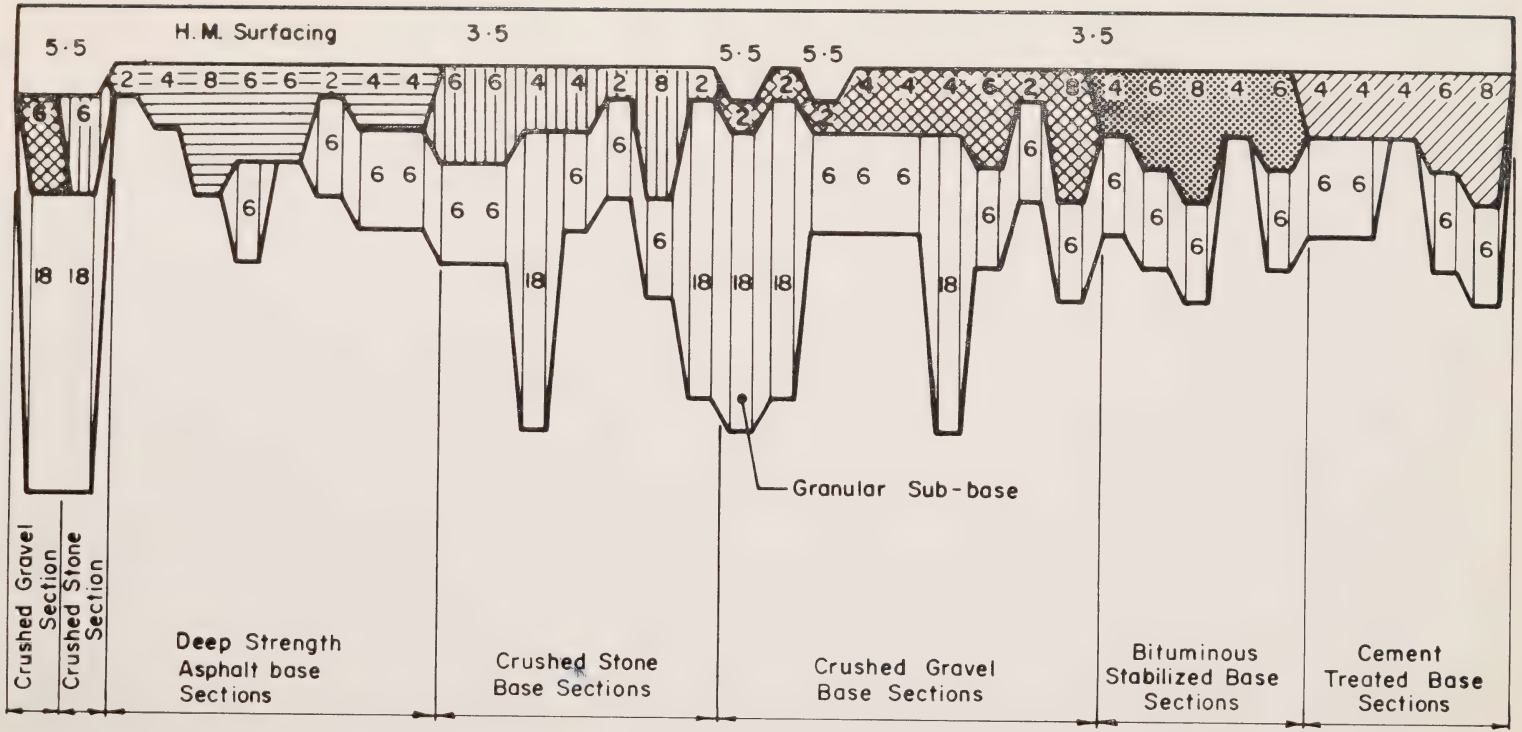
1. To verify the current flexible pavement design method used by the department.
2. To determine the relative efficiencies of the five base materials used.
3. To obtain performance information which will permit fuller use in Ontario of the results of the AASHO Road Test.

The experimental sections will be constructed between June and September and opened to traffic in the fall of 1965. An extensive program of testing will be undertaken during construction to ensure close compliance with materials specifications and thickness requirements. When the sections are opened to traffic the numbers and types of vehicles will be recorded, and the condition of the individual test sections will be observed at frequent intervals.

Use of Rust Inhibitors in Road Salt

In 1961 the Municipality of Metropolitan Toronto sponsored an investigation by the Ontario Research Foundation of the effect of an inhibitor on the corrosion of autobody steel by de-icing salt. The investigation produced a lot of useful information but the testing program was of limited duration and some questions relating to the overall, long-term effectiveness of the inhibitor in reducing auto-body corrosion were left unanswered.

In view of the increasing public interest in the possible advantages of using inhibitors in road salt, arrangements are being made to carry out longer-term, non-accelerated tests of available inhibitors. These tests will use outdoor, rotary test rigs and they will start in September 1965 and continue until May, 1967. One rig will be



Test Sections = 200 ft. Each Transition = 50 ft.
Numbers Indicate Thickness of Layer in Inches

LAYOUT OF EXPERIMENTAL SECTIONS, HIGHWAY Nº 10

(CONTRACT 64-363 SNELGROVE TO VICTORIA)

operated without salt, a second with pure salt and three others will be used to test different inhibitors. Coupons of auto-body steel will be exposed in each test rig and the rates of corrosion will be checked periodically throughout the period of testing. In addition, racks of coupons will be mounted on department vehicles operating in different parts of the province and other coupons will be exposed to atmospheric conditions at several centres.

Recreational Travel in Ontario

An inventory has been completed of all forms of outdoor recreation in Ontario, and of the origins and destinations of recreational travellers, both domestic and from other provinces and the United States. Simulation models are now being tested so that the parameters of this travel may be ascertained. Among the variables being included in the models are: populations of urban regions of origin, numbers of cottagers, campers at Provincial Parks, and guests in commercial resorts, visiting from each region, propensity to undertake recreational travel of people in various age, occupation, education, and income groups, activities, etc. Ultimately these data will be translated into vehicle volumes on specific sections of recreational highways at specific dates and times of day. The final result, it is hoped, will be a predictive model of recreational travel in Ontario.

Economic Impact of Vehicle Load Limitation

Highway pavements and bridges are constructed to withstand certain loads. Vehicle loads must therefore be limited and the limiting loads have a direct bearing on the cost of hauling raw materials and finished products over the roads. In turn unit haulage rates affect the costs of finished products and therefore the quantity of products that can be sold.

How strong are the roads and bridges of Ontario? How much would it cost the province to permit various incremental increases in permissible vehicle loads? Would the outlay of these additional funds for highway building and maintenance result in a net benefit to the economy of the province? These are the sort of questions the study of the economic impact of vehicle load limitation should answer.

The study is to be undertaken in collaboration with the Department of Economics and Development. After preparing an inventory of bridges a representative sample of bridges and pavement sections will be selected for ultimate load evaluation. Estimates will then be made of the cost of raising the load capacity of the highway system by various increments.

While these physical studies are going on an estimate will be made of the effect of the incremental increases in permissible loads on unit haulage rates, and this information will be used in assessing the impact on selected industries.

This problem is obviously a very complicated one but it is also very important and it is hoped that the study will provide a rational basis for future vehicle load legislation.

Stripping of Asphalt from Aggregate in Hot-Mix Paving Mixtures

A 1964 survey of 30 paving contracts from two to eight years old revealed that in over 80 per cent of the 300 samples taken from the pavements stripping of the asphalt had occurred, and the stripping was severe in over 50 per cent of the samples.

This represents a serious state of affairs and a two-stage program of investigation was immediately put in hand. To determine appropriate immediate action a program

was inaugurated to evaluate several additives and hydrated lime to eliminate stripping. A suitable test procedure was quickly developed and this program should be completed before the 1965 construction season. To obtain a deeper understanding of the stripping phenomenon, arrangements have been made to assign a research contract to the Ontario Research Council.

Skid Resistance of Road Surfaces

In the past three years a pendulum tester has been used to make a study of the skid resistance characteristics of Ontario roads. The results have revealed a rather wide range of conditions, some not entirely satisfactory for the prevailing traffic conditions, but the results are not always consistent with information on accidents and other indications of slipperiness, and so a brake-force trailer is being constructed as a matter of some urgency. This equipment will enable measurements of skid resistance to be made under conditions more closely approximating to normal vehicle operation, and will permit tests to be carried out at different speeds; this will be a real advantage since it is known that skid resistance decreases as speed increases.

D.H.O. Technical Reports

A new series of D.H.O. Technical Reports was started in January 1965. This series will now be used to publish all research reports originating in the department and those reporting research projects assigned to the universities since April 1, 1963. Also included will be technical reports of general interest prepared by other branches of the department and the more important articles and papers prepared by members of the department staff.

The first two reports in this series are as follows:

D.H.O. Report No. 101: Analaysis of Road Roughness Records by Power Spectral Density Techniques, by Dr. B. G. Hutchinson Waterloo University. (OJHRP Report on Project W-1.)

D.H.O. Report No. 102: The Analysis of Right, Multi-girder, Simple-span Bridge Decks as Equivalent Torsionally-Weak Grid Systems, by K. G. Tamberg, Research Branch.

Copies of these reports may be obtained from the Research Branch.

The Ontario Joint Highway Research Program (O.J.H.R.P.)

During 1964, five new projects were assigned to the universities, and grants were made to complete existing projects and prepare reports on completed projects.

The new projects were as follows:

At Queen's University:

1. Consolidation characteristics of varved clays. (Q-35)
2. Effect of freezing and thawing on the strength of asphaltic concrete. (Q-37)

At Waterloo University:

3. Formulation of a pavement serviceability measure. (W-2)
4. Traffic assignment by systems analysis. (W-3)

At the University of Western Ontario:

5. Patterns of travel to resorts in Southern Ontario. (L-1)

O.J.H R.P. reports published or approved for publication during 1964 were as follows:

Report No. 21: Prediction of Daily Average Flood Flows for Southern Ontario Rivers (Toronto).

Report No. 22: Laboratory Tests of a Full-Scale Pony Truss Bridge. Part II: Tests with Reinforced Concrete Deck. (Queen's)

Report No. 23: Laboratory Tests of a Full-Scale Pony Truss Bridge. Part III: Lateral Stability of the Trusses. (Queen's)

Report No. 24: Static and Dynamic Tests on Elastomeric Bridge Bearings at Normal and Low Temperatures. (Toronto)

Report No. 25: Analysis and Computer Program for the Solution of Skewed, Stiffened Slab Bridges. (Toronto)

Report No. 26: Classification Tests on Some Ontario Varved Clays. (Queen's)

Report No. 27: Triaxial Shear Tests on Artificial Varved Clays. (Queen's)

Report No. 28: Induced Pore-Pressures in Varved Clays. (Queen's)

Report No. 29: Annotated Bibliography on the Design of Asphalt-Aggregate Cold Mixes. (Queen's)

Report No. 30: Effect of Cross-Frame Stiffness and Torsional Restraint on the Buckling of Pony Truss Bridges. (Queen's)

Report No. 31: Effect of Crushed Particles on the Strength of Base Course Materials. (Queen's)

Report No. 32: Static and Repeated Load Tests of Delaminated Glulam Beams. (Toronto)

Report No. 33: Effect of Strain Rate on the Undrained Strength of Varved Clays. (Queen's)

Report No. 34: Pilot Tests on the Effectiveness of Lap Stirrups in Reinforced Concrete Beams. (Toronto)

Report No. 35: Model Study of a 60-degree Three-Span Skewed Bridge. (Toronto)

Report No. 36: Prediction of Settlements and Pore Pressures Beneath a Highway Embankment at New Liskeard, Ontario. (Queen's)

Report No. 37: High Strength Reinforcement in R.C. Beams. Part I: A Bibliography. (Queen's)

Report No. 38: High Strength Reinforcement in R.C. Beams. Part II: Crack Widths, Deflections, Fatigue Strength. (Queen's)

Copies of these reports may be obtained from the university named after each title.

SERVICES BRANCH

L. R. EADIE, Director of Services

The Services Branch, through its various sections, functioned throughout the year as co-ordinator and expeditor of services for the other branches of the department.

The eleven sections of the Services Branch are·

1. Executive
2. Administrative
3. Documents
4. Equipment
5. Office Services
6. Special Services
7. Supply
8. Tenders

* Right-of-way Division

9. Land Surveys
10. Property
11. Regional Services Managers

* On April 1, 1964, a Right-of-way Division was created which encompasses the Land Surveys and Property Sections, and the Regional Services Managers' function.

ADMINISTRATIVE SECTION

J. L. Monkman, Administrative Officer

The Administrative Section controls the Services Branch accounting, personnel records, attendance records, budget control, methods and procedures and statistical reporting.

Accounts

The Accounts Group controls the accounting of nine sections of Services Branch. It also controls the Services Branch budget of more than $20,000,000 which covers 49 allotments, analyzes Branch accounting and develops techniques to accommodate an expanding accounting program.

Methods and Procedures

This Group develops the Services Branch clerical procedures and maintains the statistical reporting system. It controls property agreements, appraisals and property sales, submitted to Head Office for approval.

Personnel and Establishment

The Personnel and Establishment Group acts as liaison between Personnel Branch and Services Branch Sections, administering Services Branch personnel records and documents. It reviews and records all matters pertaining to branch personnel before submission to the Personnel Branch. It maintains organization and position inventory charts for each Services Branch section. It keeps Services Branch attendance records including monthly reports to each section and quarterly reports to each Services Branch employee. The unclassified and project staff payrolls are prepared by this group.

DOCUMENTS SECTION

R. A. Ivory, Superintendent

The Documents Section is responsible for the custody of the department's records, including correspondence and plan files, libraries, microfilming, and for circular and instruction manual editing.

The services rendered by Documents Section are indicated by the extensive use made of these services during the year:

(a)	Correspondence files searches	14,000
(b)	Plans (handled for reference purposes)	81,500
(c)	Plans (whiteprint reproductions requisitioned)	81,700
(d)	Miscellaneous reproductions (correspondence, etc.)	332,800
(e)	Library circulation (books loaned)	5,200
(f)	Documents microfilmed	6,000,000
(g)	Press clippings (distributed)	11,000

The Press Clipping Service was transferred from Documents Section to the Information Section on January 1, 1965.

During the coming year, a test will be conducted in the South Western (London) Regional Office to determine whether it will be advantageous to file original plan tracings at regional offices instead of Head Office. If the results of the test are satisfactory, decentralization will be extended to the other regional offices.

With the exception of one 1958 circular, which is still under review, all circulars issued prior to January 1, 1960, were cancelled, because their content was no longer pertinent, or was included in manuals; or by re-issue.

New manuals were written and a number of old manuals were completely rewritten or revised to bring them in line with changed procedures.

EQUIPMENT SECTION

W. G. Cooke, Superintendent

Technical supervision of all D.H.O. equipment is the responsibility of the Equipment Section. The Head Office staff prepares specifications, inspects all major equipment purchases, develops new machines, and supervises the maintenance of all department equipment. Information and advice on the replacement and disposal of equipment is provided by this section.

A continuing study and reporting on equipment usage and repair costs is being carried on by the section in conjunction with the Electronic Computing Branch.

General supervision and organization of D.H.O. garages, staffs, equipment, records, and procedures, as well as maintenance methods and programs, are the responsibility of the section.

The section operates two garages—District No. 42 at Downsview, and Surrey Place at the Parliament Buildings. It also operates the Instrument Repair Shop at Downsview. Its Mobile Training School was active throughout the province, giving courses on D.H.O. mechanics and allied trades.

Sixteen and one-half miles of asphalt roads were "deslicked" by the section's deslicker.

The section's tree planters moved and replanted 1,011 trees. The crews also moved hedges and planted shrubs and bushes.

The section arranged for and supervised the drilling of 34 wells. The well-testing unit cleaned and tested 36 wells.

Of 86 asphalt distributors, either owned by the department or used on work in which the department had an interest (contract, municipal, etc.) inspected by the section's personnel, five were rejected, the remainder were certified for service. New and more effective testing equipment has been developed and built in the District No. 42 garage.

Staff is supplied by the section for instrument evaluation studies, special engineering work, and special ferry projects.

The section is responsible for the control of parking spaces for employees, and the policing of the parking lots at Downsview.

Drives, parking lots and miscellaneous areas adjacent to the department's buildings at Downsview, were maintained by the section.

OFFICE SERVICES SECTION

S. C. Booth, Superintendent

The Office Services Section is responsible for the procurement of office supplies, furniture, office equipment, stationery and medical supplies and for the distribution of these to all districts, branches and sections of the department. The Stationery Stores at Downsview maintained an inventory of 2,700 separate items and processed 23,000 requisitions. The value of shipments exceeded $965,000 with an additional inventory value in excess of $296,000. The section is responsible for the servicing and maintenance of mechanical office equipment such as typewriters, calculators and similar items for all branches and districts. Expenditure for the year was more than $99,000.

The Office Services Section operates two major reproduction units—Whiteprint, including Photography, and Reproduction-Offset.

The Whiteprint and Photographic Unit processed 21,300 requisitions, and produced approximately 3,500,000 square feet of whiteprints and 41,000 negative and positive prints.

The Reproduction-Offset Unit processed 4,407 requisitions, and produced more than 12,000,000 impressions from 63,627 printing plates.

In conjunction with the Canada Post Office, the section is responsible for providing postal service to all Department of Highways districts, regional office and offices in Downsview and the Metropolitan Toronto area.

SPECIAL SERVICES SECTION

C. S. Moase, Manager

The Special Services Section acts for the department in liaison with the Department of Public Works in all matters pertaining to buildings, building sites and office and

shop accommodation. The section is also responsible for all communications within the department such as telephone, teletype and radio facilities. The administration of service centres on controlled-access highways also falls within the section's jurisdiction.

Service Centres

The section is responsible for administering the department's policy regarding the selection, development, leasing and subsequent inspection of service centres and the development of "safety rest areas" on controlled-access highways.

The eight service centres established on Highway 401 in 1962 have now been in operation for two years and their use by the public continues to exceed all expectations. Many of the lessees have found it necessary to enlarge restaurant and take-out facilities to cope more adequately with the peak volumes encountered during the summer months. Six new service centres were established on Highway 401 during the 1964-65 fiscal year. Three of these centres were opened to the public during the winter of 1964–65 and the remainder are scheduled to be in operation by May of 1965.

During the year, contracts were awarded for the erection of two additional service centres on Highway 400 and one on Highway 401. Construction is scheduled to be completed by the spring of 1966. Tenders were also called for two Highway 401 centres scheduled to be in operation by the spring of 1967. When tenders for the two remaining sites have been called, and the centres built, the Highway 401 program will be complete.

Service at the two service centres presently operating on Highway 400 is satisfactory except on busy summer week-ends. During these periods, the sites are badly overcrowded and because they are, unfortunately, located within interchange quadrants, they cannot be enlarged to meet the demand. For this reason, the two additional sites mentioned in the preceding paragraph are being established. It is a fair assumption that their opening in the spring of 1966 will, by distributing the volume of business, greatly relieve the pressure on the two already operating.

The eight picnic areas adjacent to existing service centres on Highway 401 were extensively patronized during the summer of 1964. Improvement of these areas includes a continuing program of tree planting, clearing, seeding and mulching. By 1965 washrooms will be available at these areas.

Investigation of the need for "safety rest areas" continued. These areas will provide the motorist with facilities such as picnic tables, water and comfort stations. Suitable sites were selected and preliminary work was begun.

Communications

During 1964–65 the section processed a total of 2,986 communication requests. The number of teletype messages handled by the section during 1964–65 was 198,143. Three huge mobile radio systems were 80% completed, one each in the Kenora, Fort William and Sault Ste. Marie Districts. Upon completion of these systems, all districts will be equipped with mobile radio facilities.

Automatic telephone switchboards were installed in the Sudbury, Chatham and Ottawa District Offices.

Radio coverage tests relative to district boundary changes were 90% completed. The Teletype Centre was relocated within the Administration Building to provide more efficient operation of the Special Services Section.

The number of telephones in use by the department increased by 2%.

Wide Area Telephone Service (W.A.T.S.) has been approved for the District Office at Bancroft.

Accommodation and Buildings

All Department of Highways space requirements are under constant review by the Accommodation staff. Arrangements are made with the Department of Public Works for added leased space and new buildings. This year it was necessary to lease an additional:

1,900 sq. ft. of office space in London to accommodate the office staff of the Materials and Testing laboratory operation;

1,758 sq. ft. at Kingston to accommodate the Regional Functional Planning Section;

270 sq. ft. at Port Arthur to accommodate additional staff.

Application was made to the Treasury Board for the release of 14,310 sq. ft. in the Laboratory Building at Downsview. This space is occupied by the Department of Lands and Forests' staff and is required by D.H.O. to locate the newly formed Research Branch and decentralized sections of the Planning and Design Branches.

Construction of a new Administration Building in Kingston, began December 1964 and is scheduled for completion by November 1965. When completed, this building will house both district and regional staff.

Construction of a new repair garage in Fort William also proceeded this year and Treasury Board approval was received for the planning of a new District Office at Kenora.

Forty-five applications for new buildings were submitted to the Treasury Board and various preliminary architectural designs and plans were prepared by the section's drafting staff and recommended to the Department of Public Works.

The Department of Public Works completed three metal patrol garages that were begun in 1963.

Under arrangements with the Department of Public Works, 85 salt sheds and 18 temporary patrol offices were constructed under the supervision of the section. Eighteen property requests for new building sites were received, of which 17 were approved.

SUPPLY SECTION

R. W. Rawlings, Superintendent

Supply Section provides material purchasing and distribution services for the department. The section maintains a Purchasing Office, Central Stores Warehouse, Material Control Unit and a Bailey Bridge Supply service.

Most construction and maintenance materials and equipment are procured by the Purchasing Office for distribution throughout the department and are bought on a competitive tender basis, either invited or advertised. New sources of supply are sought by advertising. More than 10,000 purchase orders were issued covering goods to a value of $30,000,000.

Central Stores ships maintenance and construction materials to all branches of the department. Specifications and quality are rigidly controlled at Central Stores and an overnight delivery service is provided for most items.

Central Stores carries stocks of up to 2,000 different items. Some of these are reinforcing steel, bridge piling, hardware, paints, scotchlite, tools, catchbasins, sign blanks, safety clothing and devices, reflectorizing beads and many other materials used in the highway program. New items are added when necessary and some items are discontinued from time to time.

An emergency structural steel inventory is held at Central Stores, a reinforcing steel fabricating service being part of this operation.

The value of inventory at Central Stores is 1½ million dollars and annual volume of shipments 2½ million dollars.

Central Stores also provides a complete bailey bridge service. Reconditioning and tested bridge parts are supplied throughout the province for emergency bridging. This service is of particular value for construction detours and during emergencies created by floods, washouts and similar situations. Also, bailey bridges are lent to municipalities. Supplies of bailey bridge parts are stockpiled in each of five regional depots and maintenance and repair shops are operated at these depots.

The Material Control Unit arranges for disposal of surplus and obsolete equipment and materials. Used equipment is usually sold during the spring and summer months by public auction. Each year, between 200 and 300 sales of surplus and obsolete materials are held, the revenue being $350,000. These sales have proven to be an effective method of disposal. Central records are maintained of surplus materials from construction projects and all contract requirements are screened and, when practicable, surplus materials are moved to suitable alternate projects.

A central catalogue system was developed this year whereby equipment repair parts and other maintenance materials held in district stores are listed and made available to service all other districts.

Head Office supply supervisors, working under the direction of the Material Control supervisor, review purchasing, inventory control and material distribution methods with district personnel.

TENDERS SECTION

T. M. Fraser, Manager

The Tenders Section is responsible for the processing of all tenders on engineering projects, supply contracts, obsolete equipment and material sales, property sales and Special Services projects.

Formal public openings of tenders on all engineering projects are arranged by this section. Provision is made for the public to attend openings for supply and invitation bid contracts, property, material and equipment sales.

This section distributes all informational tender forms and tendering material and keeps a register of contractors and suppliers.

The Tenders Section places all advertisements about contract tendering, auction sales, expropriation notices, etc., as well as the advertisements for district and section requirements. It processes all accounts for advertising.

The section collects and accounts for such fees as are levied for tendering material. It distributes the manual on "General Conditions and Standard Specifications of the Contract", which is available in reduced size, and collects the fees for this service. Purchasers of this manual receive revisions as they are made. Standard size specification revisions are distributed to all contractors.

The section manager, or his assistant, acts as secretary of the Property Approval Committee. The committee meets weekly to review and process property appraisals, purchase and sale approvals.

During the 1964–65 fiscal year, the Tenders Section issued approximately 1,700 advertising orders covering the placement of some 2,000 advertisements. Total cost of the advertising was $77,654.56.

Tenders were called as follows:

(A) Engineering Contracts

Contracts processed	482
Contracts awarded	457
Tendering material released (plans, profiles, etc.)	3,642
Net tenders processed	2,337
Average number of bids per contract	4.85

(B) Engineering Contracts

Invitation bids (contracts less than $10,000.00 in value)

Invitation contracts processed	59
Tendering material released	536
Net tenders processed	201
Average number of bids per invitation contract	3.4

(C) Property Sale Transactions

(Public tender)

Sales processed	18
Net tenders processed	60
Average number of bids per sale	3.3

(D) Material Requirements

Supply contracts and enquiries processed	3,722
Net tenders processed	16,114
Average number of bids	4.33

(E) Obsolete Material Sales

Number of sales processed	42
Net number of tenders processed	215
Average number of bids per sale	5.1
Total expenditure	$118,709.85
Gross revenue (sale of tendering material)	34,770.00
Refunds	320.00
Net revenue (sale of tendering material)	34,450.00
Gross revenue (sale of specification manuals)	1,515.00
Refunds	Nil
Net revenue (sale of specification manuals)	1,515.00
Total net revenue (all items)	35,965.00

RIGHT-OF-WAY DIVISION

LAND SURVEYS SECTION

W. D. Ratz, P.Eng., O.L.S., Superintendent

The Land Surveys Section is responsible for developing and formulating policies and procedures affecting legal land surveys, plan preparation and registration and associated functions for the use of a large surveying organization operating from five regional offices as an integral part of the Right-of-way Division.

In addition to preparing all recommendations for Orders-in-Council necessary for the designations, closings, reversions or transfers of highways, the section also, by review, maintains a uniform surveying and drafting operation in the regions; develops and co-ordinates new electronic computing procedures; directs control surveys and provides professional and technical guidance to the regional staff as required.

Through the region offices, registration was obtained for 2,084 plans in the proper registry and land titles offices during the fiscal year.

The following table outlines the various types of plans prepared by the regional land surveys units. The plans are listed by type and grouped according to function. Included in the table are the number of plans and the total mileage of each type.

During the fiscal year 76.75 miles of highway were designated as controlled-access highways. This figure includes the designation of:

(a) Highway 12 ..... Beaverton By-Pass
(b) Highway 17 ..... Ottawa to Antrim
(c) Highway 401 ..... Gananoque to Brockville

The total mileage of controlled-access highways in the province now stands at 1,586.49. Two interchange areas were designated, but the total mileage was not increased.

The Land Surveys Section conducted two training courses for field personnel during the year. The courses were attended by 35 candidates. Land Surveys qualifying examinations for field and drafting staff were tried by 125 candidates of whom 78 passed and 10 passed with supplementals. The apprenticeship program for Ontario Land Surveyors is being continued by this section and during the year five apprentices passed the final examinations.

Co-ordinate control surveys are in progress on sections of highways throughout the province. Extremely accurate survey instruments, capable of measuring within a fraction of an inch any distance from 50 feet to several miles, are used on surveys of this type. A transit which allows direct reading of angular measurements to one second is also used.

In co-operation with Topographical Surveys, Department of Mines and Technical Surveys, Ottawa, a network of control monuments with geodetic values has been established between Oakville and Hamilton on Highways 5 and Q.E.W. These monuments complete the link between the Metropolitan Toronto and Hamilton networks and will provide a basis for co-ordinate control surveys which will prove beneficial to the department in all engineering and surveying work.

Appendices to this report give details of controlled-access highway designations and assumptions, designations, reversions and transfers of sections of the King's highway, secondary highway and tertiary road systems.

TOTAL NUMBER OF PLANS AND MILEAGE

Type	Nomenclature	No. of Plans	Mileage
Plan Types A-G Inclusive—Acquisition of Lands			
"A"	Land plans	665	266.426
"B"	Amended land plans	78	14.883
"C"	Land plans acquiring limited interest	41	8.249
"D"	Plans of abandonment	28	6.158
"E"	Crown land plans	103	59.326
"F"	Amended Crown land plans	11	.950
"G"	Crown land abandonment plans	52	31.171
Plan Types I-M Inclusive—Assumption of Existing Highway			
"I"	Preliminary assumption plans acquiring an existing highway	33	109.002
"J"	Amended preliminary assumption plans	3	.....
"K"	Assumption plans (replacing)	167	313.906
"L"	Assumption plans	48	23.059
"M"	Amended assumption plans	16	.320
Plan Types N-P Inclusive—Designations of Highways			
"N"	Proposed highway plans	17	81.840
"O"	Highway plans	104	530.950
"P"	Controlled-access highway plans	.....	.....
Plan Types Q-T Inclusive—Transfer and Closing of Highways			
"Q"	Reversion to Road Authority	4	1.196
"R"	Transfer to municipality	83	69.635
"S"	Closing of Road, plans to illustrate route closed by Order-in-Council	63	32.262
"T"	Road closing plans (Ontario Municipal Board)	4	.....
Plan Types H and U-X Inclusive and Others—			
"H"	Navigable Waters Protection Act plans	7	.140
"U"	Plans to illustrate descriptions	370	62.643
"V"	Survey plans of boundaries—supplementary	13	5.291
"W"	Indian Affairs plans	3	2.737
"X"	Connecting link designations and agreements	144	90.976
	Miscellaneous plans	27	6.198
	Totals	2,084	1,717.318

RIGHT-OF-WAY DIVISION

PROPERTY SECTION

R. W. Bond, Superintendent

The Property Section acquires property and property rights required for highway purposes, and settles claims arising from such acquisition. It also manages and disposes of land and buildings surplus to highway requirements.

During the year, 2,820 new agreements were taken with property owners. The carry-over from the previous year of 838 unpaid agreements added to the number of new agreements made a total of 3,658 to be paid. Of this total, 2,955 were paid, the amount involved being $7,507,472. The number unpaid at the end of the year was 703.

At the close of the fiscal year there were 2,285 property owners with whom agreements had not been negotiated compared with 1,805 at the same time last year.

The purchasing of property for Highway 401, Windsor to Quebec border, is progressing satisfactorily. Of a total of 5,331 owners, 5,254 agreements have been negotiated, leaving 77 to be settled.

The purchase of property for the widening of Highway 401 from Yonge Street westerly to Highway 27 continues. A total of 49 properties, including 26 buildings, were purchased during the fiscal year, the expenditure involved being $1,168,129. To date, 345 properties, including 214 buildings, have been purchased, of which a total of 199 buildings have been removed or demolished by the methods indicated below:

1. Invitation tender	118
2. Public auction	55
3. Demolished by highway contractor	13
4. Public tender	10
5. Demolished under agreement	2
6 Direct	1
TOTAL	199

Revenue from the sale of surplus property along Highway 401 amounted to $104,022.20 which, added to the previous recovery of approximately $3,866,097.21, gives a cumulative recovery to date of approximately $3,970,119.41.

Thirty-one applications were made to the Ontario Municipal Board for determination of compensation which, added to the carry-over of 11, gives a total of 42, categorized as follows:

1. Appointments heard and awards made	12
2. Settlements made and applications or appointments cancelled	7
3. Appointments not yet heard	11
4. Applications awaiting the granting of appointments	12
TOTAL	42

During the year, Property Section personnel made 1,730 appraisals. During the same period, independent fee appraisers completed appraisals on 125 properties.

At the close of the fiscal year, 559 properties, which were recorded as surplus to D.H.O. requirements, were under various stages of processing for disposal.

Revenue from the sale of surplus property totalled $515,499.40 compared with $1,244,044.68 for the previous year and revenue from leased properties amounted to $221,020.30.

RIGHT-OF-WAY DIVISION

REGIONAL SERVICES MANAGERS' SECTION

On April 1, 1964, the Regional Services Managers' Section came under the jurisdiction of the new Right-of-way Division, Services Branch.

This division binds the Regional Property, the Land Surveys and the Administrative Groups into a more efficient unit.

Instead of three sections, each reporting to its respective Head Office Superintendent, there is now one co-ordinated unit in each region reporting to its Regional Services Manager who, in turn, reports to the Director of Services.

Following is a list of Regional Service Managers and their regions:

1. **D. F. Walton** ..... **South Western**
2. **H. Aron** ..... **Eastern**
3. **M. W. Robinson** ..... **Central**
4. **D. W. Baird** ..... **Northern**
5. **C. E. Warner** ..... **North Western**

CONSTRUCTION OF TRANS-CANADA HIGHWAY

Including Ottawa Queensway, 1964-1965

T. C. MUIR, P.Eng., Contract Control Engineer

This year there was a slight increase in the construction work on the Trans-Canada Highway from last year and construction of the Ottawa Queensway continued satisfactorily.

Grading completed this year was approximately 39 miles as compared to 36 miles of the previous year. Paving completed this year was approximately 54 miles as compared to 31 miles the previous year. Only five new structures were completed compared to ten last year.

On stage 111 of the Ottawa Queensway concrete paving was laid from Carling Avenue to O'Connor Street (3.4 miles) and was opened to traffic. Main Street structure on stage IV of the Ottawa Queensway was completed and the north-east quadrant of Alta Vista Drive interchange was completed also. The Ottawa Queensway is now open from the west city limits to O'Connor Street, which is the downtown area.

In the Kingston District from the east limits of Madoc by-pass to the junction of Highway 37 was completed.

In the Huntsville District a high-level structure and approaches over the narrows at Atherley on Highway 12 was completed and the old swing bridge was eliminated thus allowing an uninterrupted flow of traffic on the highway and on the Trent Valley waterway.

Grading drainage and hot-mix paving was completed on Highway 17 T.C.H. in the district of Sault Ste. Marie from 1.14 miles west of Secondary Highway 563 northerly for 7.68 miles. The new Pancake River bridge was included in this project.

In the Fort William District a section of Trans-Canada Highway 17 from 10.4 miles east to 5.2 miles west of English River was reconstructed to Trans-Canada standards and paved. The next section west 6.7 miles long was graded and will receive hot-mix pavement in the summer of 1965. Reconstruction of another section of Trans-Canada Highway from 11.9 miles west of English River westerly 13.52 miles commenced last November. On Highways 11 and 17 hot-mix paving was completed from the junction of Highway 130 westerly 11.58 miles, which was started in 1963.

In the Kenora District a heavy rock grading contract on Highway 17 from Keewatin westerly for 9.56 miles was completed and covered with one lift of hot-mix asphalt. At Dryden on Highway 17 the work of sub-excavation, granular base, storm sewers, curb and gutter, and hot-mix pavement through the town was completed.

The total work on the Trans-Canada Highway completed to the end of the year was:

Grading and culverts	1,220.64 miles
Bituminous hot-mix pavement	1,134.13 miles
Permanent bridges and structures built	166

GRADING AND CULVERTS

District	Hwy.	Location	Total Miles	Compl. Previous Years	Compl. this Year
Ottawa	Q'Way	Elgin Street to Main Street	0.20	0.10	0.10
Ottawa	Q'Way	Main Street, easterly	0.49	.....	0.29
Kingston	7	From east limits of Madoc By-pass, easterly to Jct. Hwy. 37	6.45	2.25	4.20
Port Hope	12	Beaverton By-pass	6.96	.....	3.62
Sault Ste. Marie	17	From 1.14 mi. west of Secondary Hwy. 563, northerly	7.68	.....	7.68
Fort William	17	English River, westerly	10.38	.....	10.38
Fort William	17	11.2 mi. west of English River, westerly.	13.52	.....	1.50
Kenora	17	Kenora, easterly	5.27	.....	4.00
Kenora	17	Keewatin, westerly	9.56	2.10	7.46
		Totals	60.51	4.45	39.23
		Bituminous Hot Mix			
Ottawa	Q'Way	Carling Avenue to O'Connor Street	3.40	.....	3.40
Kingston	7	East limits of Madoc By-pass to Jct. Hwy. 37	6.45	.....	6.45
Huntsville	12	From east end of South Orillia By-pass and Atherley Narrows bridge	1.40	.....	1.40
Sault Ste. Marie	17	From 1.14 mi. west of Secondary Hwy. 563, northerly	7.68	.....	7.68
Fort William	17	English River, easterly	10.40	.....	10.40
Fort William	17	English River, westerly	11.91	.....	5.20
Fort William	11 & 17	From 1.2 mi. east of Hwy. 130, westerly to Kakabeka Falls	11.58	5.00	6.58
Kenora	17	From east of Keewatin, westerly	9.60	.....	9.60
Kenora	17	Blackwater Creek, westerly	19.31	16.41	2.90
		Totals	81.73	21.41	53.61
		Granular Base (New Grading)			
Ottawa	Q'Way	Carling Avenue, easterly to O'Connor.	3.40	2.60	0.80
Ottawa	Q'Way	Elgin Street to Main Street	0.25	.....	0.10
Kingston	7	East limits of Madoc By-pass to Jct. Hwy. 37	6.45	2.25	4.20
Port Hope	12	Beaverton By-pass	6.96	.....	1.60
Huntsville	12	East end of South Orillia By-pass and Atherley Narrows bridge	1.40	.....	1.40
Fort William	17	English River, westerly	10.38	.....	10.38
Fort William	11 & 17	From 1.2 mi. east of Hwy. 130, westerly to Kakabeka Falls	11.58	.....	11.58
Kenora	17	Blackwater Creek, 10.4 mi. east of Dryden, westerly	19.31	2.90	16.41
Kenora	17	Keewatin, westerly	9.56	2.10	7.46
Kenora	17	Kenora, easterly	5.27	.....	4.00
		Totals	74.56	9.85	57.93

New Bridges

Ottawa	Q'Way	Main Street
Huntsville	12	Atherley Narrows
Sault Ste. Marie	17	Pancake River
Fort William	17	Lot 2, Con. IV, Twp. of Pyramid
Fort William	11& 17	Lots 20 and 21, Conc. 11, Twp. of Paipoonge

Total—5 new bridges.



Trans-Canada Highway 17 at Batchawana Bay — north of Sault Ste. Marie, photo 5457 — (Trans-Canada Highway Report)

MINING, ACCESS, AND RESOURCES ROADS REPORT, 1964-65

T. C. MUIR, P.Eng., Secretary

Mining and Access Roads Committee (Interdepartmental)

A Mining and Access Roads Committee consisting of the Treasurer of Ontario as chairman and the Ministers of the following departments: Highways, Lands and Forests, Mines, and Municipal Affairs administers a fund which is voted by the Legislature in the Department of Mines' estimates for carrying out works under the Roads-to-Resources Program and under the Mining Assistance Program of the Department of Mines.

The Resources Roads Program is carried out under an agreement between the Federal Government and the Province of Ontario, and under this agreement the Department of Highways, acting as the agent for the Ontario Government, will design and supervise such program which eventually proposes an expenditure in northern and northwestern Ontario in the amount of $15,000 000 by March 31, 1967. The cost of such works would be shared between the Federal Government and the Provincial Government, except in the cases wherein a private enterprise would directly benefit. In such latter case, the costs would be shared between the two governments and the private company concerned.

The following was accomplished this year:

New Liskeard District

Mining Assistance Road:

Under mining assistance funds from the Department of Mines and on a shareability basis with the mine corporation, an access road was reconstructed over an old road into the Jones & Laughlin Iron Ore Mine east of Highway 112 some 5.7 miles. A 4.7 mile portion of this road was assumed as a secondary highway by the Department of Highways on April 1, 1964, and work is now in progress in building a road to the mine to a secondary highway status. Contributions on this latter project are being made on a shareability basis between the Department of Highways and the mine corporation.

During this fiscal year an access road has been partly constructed into the Texas Gulf Sulphur development north of Timmins from Highway 101 northerly for some 17 miles on a shareability basis between the Department of Highways, the Department of Mines through the mining assistance fund, and the mine corporation. Work is further progressing at the present time on the access road and should be completed this fall of 1965.

Also under the mining assistance funds for the Department of Mines on a 50% shareability basis between the Rusty Lake Mining Corporation and the Department of Mines, further improvement was made to the 21 miles of the access road by correcting the drainage and placing of some granular materials in certain sections to improve the access.

Sudbury District

Resource Road—The Flack Lake Road:
This resource road was added to the Roads-to-Resources Agreement between the Provincial and Federal Governments in October 1963 and under this arrangement 8 miles are presently under construction to connect Highway 639 to Highway 546 of which 3.5 miles were completed this fiscal year, and construction is proceeding this construction year of 1965 to complete the 8-mile section together with a structure over the Boland River. Clearing was carried out from Highway 546 northwesterly during the winter 1964–65 toward Highway 129 in extending this Flack Lake road further for approximately 15 miles.

Fort William District

Resource Road—Savant Lake Southerly to Ignace Highway 17:
This resource road which will eventually become an extension of Highway 599 from Pickle Crow to Savant Lake saw the completion of three grading contracts to complete the section from 46 miles south of Savant Lake to 74 miles south of Savant Lake and in addition to this crushed gravel was placed from 25 miles south of Savant Lake to 47 miles south of Savant Lake.

A grading contract was called in the construction year 1965 from mile 74 to the intersection of the Savant Lake Road with Highway 17 (approximately 80 miles south of Savant Lake) and it is estimated that this contract would be completed in the fall of 1965 along with a crushed gravel contract for placing gravel from mile 47 to mile 80 south of Savant Lake at the junction of Highway 17.

Resource Road—Spruce River Road, Highway 17 (east of Port Arthur) to Cheeseman Lake, approximately 74 miles:

This 74-mile project was constructed under the Roads-to-Resources Agreement with the cost being shared equally by the Federal Government and the Province of Ontario and the Abitibi Power and Paper Company Limited, and the project was completed in the fall of 1964.

Resource Road—Lingman Lake Road—Central Patricia Northerly:

This road is also being constructed under the Roads-to-Resources Agreement with the cost being shared equally between the Federal Government and the Province of Ontario, and during this fiscal year 14.1 miles were constructed together with structures at the Crow River at July Falls and the Crow River at Central Patricia and in addition preparatory structure work was done at the Mud River, 34 miles north of Central Patricia.

RESOURCES ROADS, 1964-65

Financed Partially by the Province under the Federal-Provincial Roads-to-Resources Agreement

District	Location	Year Begun	Total Miles	Miles Compl. Previous Years	Miles Compl. 1964–65	Miles to Compl.
New Liskeard	Foleyet west	1958	34.0	34.0	.....	.....
Sudbury	Flack Lake Road	1963	38.0	7.0	3.5	28.5
Sault Ste. Marie	Chapleau east	1958	26.0	26.0	.....	.....
Fort William	Nakina to Terrier Lake	1959	47.0	47.0	.....	.....
	Savant Lake to Hwy. 17	1959	79.6	46.5	27.6	5.5
	Hwy. 17 to vicinity of Cheeseman Lake	1959	74.5	59.5	5.0	10.0
	Central Patricia, northerly	1962	.....	15.3	14.1	.....
Kenora	Minaki south	1959	21.5	21.5	.....	.....
	Totals		320.6	256.8	50.2	44.0

MINING AND ACCESS ROADS, 1964-65

Financed Partially by the Province

During this fiscal year the Department of Mines through the administration of the Mining and Access Roads Committee contributed $164.547.66 toward the cost of four access roads servicing each of the Stairs Exploration and Mining Company for reconstruction of portion of its access road; the Texas Gulf Sulphur Company for the construction of 9.1 miles of new road; the A. E. Wicks Limited for reconstruction of a portion of its access road; and finally the Zenmac Metal Mines Limited for the construction of 13 miles of new road. The financial shareability on behalf of the Department of Mines in the above cases would be either on a straight 50-50 basis with the corporation concerned or on fixed contribution not to exceed $7.500 per mile, whichever is the lesser.

CONTRACT WORK FOR 1964-65

T. C. MUIR, P.Eng., Contract Control Engineer

This year once again saw an increase in the number of contracts of all types awarded, along with an increase in the total monetary value of all contracts awarded. This year there were 456 contracts awarded compared to 439 contracts of the previous year, representing an increase of 3.9% and this increase in the number of contracts awarded resulted in a 4.4% increase in the total monetary value of the contracts awarded over the previous year.

The previous year saw the implementation of the application of penalties under the Department of Highways' Qualification Procedures inaugurated in 1957. This year resulted in a further increase in the installation of penalties under these procedures for low quality and poor performance to the extent that 120 warning letters

have been sent to delinquent contractors advising them of the departments' concern with their work and 92 reductions have been found necessary to be made in the contractors' rating. This year the qualification procedures were made applicable to maintenance contracts (ordinary expenditure) of a certain value and was further expanded to include the structural steel industry under the departments' calling of contracts for structural steel. With the inception of the qualification requirements into these other types of contracts practically 85% of all contracts awarded in 1964 in respect to the number of contracts awarded, and 98% in respect to the monetary value of all contracts so awarded were applicable to the qualification procedures.

With the very close scheduling of the departments' contracts it was found necessary to increase the number of contracts wherein liquidated damages were installed to the extent that this year well over 95% of all contracts called contained the special clause in respect to liquidated damages.

With the expansion of the number of contracts requiring liquidated damages and in the number of contracts now applicable to the Department of Highways' qualification procedures, the department has witnessed a marked improvement in the number of contracts being completed on time.

The number of contracts called by what is known as an Invitation Bid was reduced this year as it is the department's policy to call contracts by public advertisement wherever time does permit proper pre-engineering and calling for advertisement. However, owing to the urgency of having some work being carried out, it was found necessary to invite contracts through the invitation bid procedure on 53 contracts which is a considerable reduction from the 85 of the previous year.

Along a somewhat similar line where time does not permit the adequate pre-engineering, the department calls contracts under what is known as an Equipment Rental Contract, wherein the department requests bids on equipment and labour by publicly advertised contracts. These types of contracts are mainly confined to access-road types in that these roads are usually constructed in the more remote areas and customarily under a crash program, and therefore, full-scale pre-engineering could not be carried out. The following is a summary of the contract work awarded for 1964–1965.

TYPE OF WORK

	Maintenance	Total
Prime dust layer		11
Crushed gravel (including 45 capital contracts)		80
Hot-mix patching		30
Surface treatment		8
Winter sanding		19
Screened sand		14
Bridge painting		10
Calcium chloride apply		5
Total		177

CONSTRUCTION

Concrete paving		7
Grading and culverts	76 structures included	61
Grading and hot-mix paving		93
Hot-mix paving		15
Structures		10
Structural steel		28
Prestressed beams		18
Miscellaneous		47
TOTAL		279
GRAND TOTAL—MAINTENANCE, CONSTRUCTION		456

APPENDIX No. 1

BRIDGES COMPLETED DURING 1964

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Atherley Narrows	Steel plate girder, simply supported and pretensioned beams, simply supported	2 @ 79′-0½″ 8 @ 80′	Hwy. 12 Orillia–Midland	Town of Orillia	....	....	Simcoe	11
Ausable River and Grand Bend	Post-tensioned concrete, rigid frame	116′	Hwy. 21 Morpeth–Owen Sound	Bosanquet	1	East & West	Lambton	1
Bainsville Road	Prestressed concrete beam, simply supported	67′-5″/4 @ 68′ 59′-5″	Hwy. 401 Bainsville–Quebec Bdry.	Lancaster	16–17	I	Glengarry	9
Basket Weave Bridge, east Bd. Lane	Post-tensioned hollow deck slab, continuous	90′/160′/90′	Hwy. 401 Keele St.–Jane St.	North York	....	....	York	6
Basket Weave Bridge, west Bd. Lane	Post-tensioned hollow deck slab, continuous	90′/160′/90′	Hwy. 401 Keele St.–Jane St.	North York	....	....	York	6
Bear Passage	Steel plate girder, simply supported	360′	Hwy. 11 Fort Francis–Aticokan	Halkirk	12	II	Rainy River	20
Beaver Creek	Concrete rigid frame	41′-6″	Development Road 696 Hwy. 62–St. Ola	Limerick	9	I	Hastings	10
Black Creek Extension	Concrete barrel arch	40′	Hwy. 401 at Jane St.	North York	....	....	York	6
Black River	Pretensioned concrete beams	86′-5″	Hwy. 48 Toronto–Sutton	N. Gwillimbury/ Georgina	1 & 11	VII, III, IV	York	6
Brantford, C.N.R. Overhead	Steel plate girder, simply supported (dual)	70′/89′/70′	Hwy. 403 Cainsville–Brantford W.	City of Brantford	....	....	Brant	4
Brant Street widening	Concrete rigid frame	58′-6″	Q.E.W. Burlington–Hamilton	Town of Burlington	....	....	Halton	4
Catfish Creek	Post-tensioned end spans, pretensioned centre span, continuous	37′-3″/153′ 37′-3″	Hwy. 73 Port Bruce	Malahide	5	I	Elgin	2
Chestnut Street	Pretensioned concrete box beams (dual)	58′	Hwy. 406 Welland–St. Catharines	City of St. Catharines	....	....	Lincoln	4
C.N.R. Overhead, north of Q.E.W.	Continuous steel plate girder	42′-6″/54′/42′-6″	Hwy. 25 Q.E.W.–Hwy. 5	Town of Burlington	15–16	II S.D.S.	Halton	4

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Conestogo River	Pretensioned concrete girder, simply supported	53′/64′/53′	Hwy. 86 Elmira–Listowel	Wellington	17	I, XIV W.S.	Wellington	3
Conestogo River	Prestressed concrete girder	70′-8½″	Hwy. 6 Arthur–Owen Sound	Arthur	....	....	Wellington	5
County Road Underpass	Prestressed concrete girder, simply supported	35′/66′-3″/66′-3″ 35′	Hwy. 401 Marysville–Napanee	Richmond	12–13	III	Lennox and Addington	8
County Road 10 Underpass	Prestressed concrete girder, simply supported	35′/74′-6″/74′-6″ 35′	Hwy. 401 Marysville–Napanee	Richmond	1	III	Lennox and Addington	8
County Rd. 26 Overpass	Continuous concrete "I" beam	42′/84′/84′/42′	Hwy. 401 Cornwall–Lancaster	Charlottenburg	16-D	II-III	Glengarry	9
Crow River	Steel beam, wooden deck	67′	Res. Road Central Patricia	Connell	....	....	Kenora	19
Crow River	Steel beam, wooden deck	80′	Res. Road at July Falls	Unsurveyed Territory	....	....	Kenora	19
Curry Hill Road Underpass	Prestressed concrete beams, simply supported	2 @ 73′-7½″ 2 @ 74′-6″	Hwy. 401 Bainsville–Quebec Bdry.	Lancaster	9	I	Glengarry	9
Dodd's Creek	Concrete barrel arch	68′-1⁵⁄₁₆″	Hwy. 3 Talbotville–Shedden	Southwold	34	NN BTR	Elgin	2
Don River, Concord Bridge	Concrete rigid frame	35′	Hwy. 7 Bathurst Street–Hwy. 400	Vaughan	5–6	III	York	6
Driftwood River	Double single Bailey	60′/80′/60′	Hwy. 577	Taylor	12	V	Cochrane	14
Dufferin Street, Spadina Bridge No. 3	Pretension beams, continuous	49′/49′	Hwy. 401 Keele St.–Bathurst St.	North York	....	....	York	6
Farley Tract, T.H. & B. Rlwy.	Prestressed concrete beams, simply supported	44′/40′/44′	Hwy. 403 Cainsville–Brantford W.	Brantford	....	....	Brant	4
Giles Creek	Timber bridge, glu-laminated deck	2 @ 13′-3″ 2 @ 16′	Hwy. 107 Chapleau–Wawa	Cosens	....	....	Sudbury	18
Hawk Creek	Continuous steel beam	2 @ 50′	Hwy. 547 Hwy. 101–Hawk Jct.	No. 28	....	Range XXIV	Algoma	18

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Hog River	Concrete rigid frame	40′	Hwy. 12 Orillia–Midland	Tay	13	VI	Simcoe	11
Hydes Creek	Prestressed concrete girder	60′	Hwy. 41 Kaladar–Eganville	Denbigh	4	XV	Lennox and Addington	10
Hwy. 400 and 401 Interchange, Structure No. 1	Prestressed concrete girder, simply supported	36′-3½″ /83′-¾″ 42′–6⅛″	Hwy. 401	North York	....	....	York	6
Hwy. 400 and 401 Interchange, Structure No. 4	Post-tensioned concrete deck slab	57′-9¾″ 126′-8⅞″ 57′-11¼″	Hwy. 401	North York	....	....	York	6
Hwy. 400 and 401 Interchange, Structures 5 and 8	Post-tensioned concrete deck slab	W 119′ /69′ /96′ 128′ /113′ E 113′ /128′ /96′	Hwy. 401	North York	....	....	York	6
Hwy. 400 and 401 Interchange, Structure No. 6	Continuous concrete deck slab	34′-6″ /44′ 34′-6″	Hwy. 401	North York	....	....	York	6
Hwy. 400 and 401 Interchange, Structure No. 9	Post-tensioned concrete deck slab	60′ /90′-11¼″ 140′-11¼″ / 94′-5½″ /100′- 4¼″ /100′-4¼″ 114′-8½″ / 58′-6½″	Hwy. 401	North York	....	....	York	6
Hwy. 400 and 401 Interchange, Structure No. 11	Post-tensioned concrete deck slab	125′ /125′-6″ /75′	Hwy. 401	North York	....	....	York	6
Hwy. 400 and 401 Interchange, Structure No. 12	Post-tensioned concrete deck slab	65′ /82′ /100′ /82′ 65′	Hwy. 401	North York	....	....	York	6
Hwy. 403, Ramp "M", Chedoke Br. No. 4, Underpass	Steel plate girder, simply supported	68′ /89′ /93′ /40′	Hwy. 403 City of Hamilton	City of Hamilton	....	....	Wentworth	4
Hwy. 403, C.N.R. Subway, Chedoke Bridge, No. 8	Steel plate girder, simply supported	48′-6″ /64′ /64′ 42′–6″	Hwy. 403 City of Hamilton	City of Hamilton	....	....	Wentworth	4
Hwy. 403, Ramp "I", Chedoke Br. No. 15, Underpass	Continuous concrete slab	3 @ 32′	Hwy. 403 City of Hamilton	City of Hamilton	....	....	Wentworth	4
Hwy. 403, Ramp "D", Chedoke Br. No. 22, Underpass	Steel plate girder, simply supported	66′ /85′ /81′ /53′	Hwy. 403 City of Hamilton	City of Hamilton	....	....	Wentworth	4

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Hwy. 403–Aberdeen Avenue, Chedoke Br. No. 23, Underpass	Steel plate girder, continuous	60′/83′/74′/53′	Hwy. 403 City of Hamilton	City of Hamilton	....	....	Wentworth	4
Indian River at Alice	Steel plate girder	115′	Hwy. 62 Killaide–Pembroke	Alice	10	X	Renfrew	10
Indian River	Prestressed concrete beams, semi-continuous end spans, simply supp.	35′/61′/80′/61′ 35′	Hwy. 402 Jct. Hwy. 7–Bluewater Bridge	City of Sarnia	....	....	Lambton	1
Irvine Creek	Continuous steel beam	57′/76′/57′	Hwy. 6 Fergus–Arthur	Nichol	8	XV-XVI	Wellington	3
Jane Street	Pretensioned box girder	87′-6″	Hwy. 401	North York	....	....	York	6
Johnstown Creek	Prestressed concrete beam	63′	Hwy. 2 Prescott-Johnstown	Edwardsburg	28	I	Leeds and Grenville	8
Kirkland Creek No. 1	Concrete rigid frame, open culvert	24′	Hwy. 86 Elmira–Listowel	Peel-Wellesley	17 & 17	I-XIV	Wellington	3
Kirkland Creek No. 2	Concrete rigid frame, box culvert	24′	Hwy. 86 Elmira–Listowel	Peel-Wellesley	16 & 16	I-XIV	Wellington	3
Kirkland Creek, No. 3	Concrete barrel arch	28′	Hwy. 86 Elmira–Listowel	Peel–Wellesley	16 & 16	I-XIV	Wellington	3
Little Maitland River	Concrete rigid frame	42′	Hwys. 2, 23 Palmerston–Listowel	Wallace	24–25	VIII	Perth	3
Little Pine Lake	Creosoted timber	2 @ 13′-3″ 5 @ 16′	Hwy. 101 Chapleau–Wana	Peters	..	.	Sudbury	18
Machar Lake	Pretensioned concrete beams	47′-6″	Development Road 709 South River–Rye	Machar	27	V	Parry Sound	11
Marysville, C.N.R. Overhead	Prestressed concrete beams, semi-continuous	3 @ 43′	Hwy. 2 Marysville	Tyendinaga	31	T.S.R.	Hastings	8
Marten Creek	Concrete box culvert	20′	Hwy. 11 Cochrane–Kapuskasing	Fauquier	8	II-III	Cochrane	16
McVeigh Creek	Continuous steel beam	39′-6″/54′ 39′-6″	Hwy. 547 Hwy. 100–Hawk Jct.	No. 28		Range XXIV	Algoma	18

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Mitchell, C.N.R. Overhead	Continuous steel beam	40′ /36′ /40′	Hwy. 23 Mitchell–Russeldale	Town of Mitchell	....	....	Perth	3
Modeland Road Interchange	Prestressed concrete beams, simply supported	32′ /61′-6″ /61′-6″ 32′	Hwy. 402 Hwy. 7–Bluewater Bridge	Sarnia	15–16	VI-VII	Lambton	1
Muircirk Road Underpass	Steel beam, simply supported	40′ /61′ /61′ /40′	Hwy. 401 Chatham–London	Orford	16–17	VII	Kent	1
Nat River	Steel beam, simply supported	25′-1½″ /56′-6″ 25-′1½″	Hwy. 101 Foleyet–Timmins	Reeves	....	....	Sudbury	14
Niagara Street Underpass	Prestressed concrete beam, semi-continuous	2 @ 35′ /2 @ 50′ 2 @ 63′-5″	Q.E.W., St. Catharines–Niagara Falls	City of St. Catharines	....	....	Lincoln	4
North Park Street	Prestressed concrete beams, semi-continuous	40′ /59′ /59′ /40′	Hwy. 403 Cainsville–Brantford	City of Brantford	....	....	Brant	4
Paipoonge, C.N.R. Overhead	Steel plate girder, continuous	80′ /105′ /80′	Hwys. 17 and 11 Hwy. 130, westerly	Paipoonge	20–21	II	Thunder Bay	19
Pancake River, Widening	Creosoted timber	2 @ 13′-3″ 2 @ 15′-10″ 4 @ 15′-7″	Hwy. 17 S.S. Marie–Wawa	Herrick–Ryan	....	Sec. 3 & G.	Algoma	18
Park Road	Prestressed concrete beam, semi-continuous	40′ /64′ /64′ /40′	Hwy. 403 Cainsville–Brantford	Brantford	36–37	III	Brant	4
Plains Road, C.N.R. Overhead, west of Freeman Cut-off	Steel plate girder, simply supported	75′ /75′ /37′ /75′ 75′	Old Q.E.W. Hwy. 25–Hwy. 2	Town of Burlington	17	Br. B.L.	Halton	4
Pleasant, C.N.R. Overhead	Prestressed concrete beam, simply supported	55′-11″ /54′-5¾″ 55′-11″	Hwy. 7 Brampton–Georgetown	Chinguacousy	10	III	Peel	4
Pretty River	Pre-tensioned hollow slab deck units	47′-6″	Hwy. 26 Stayner–Owen Sound	Nottawasaga	43	VII	Simcoe	5
Scanes Road	Steel beam, simply supported	40′ /61′ /61′ /40′	Hwy. 401 Chatham–London	Howard	6–7	VI	Kent	1
Sellars Road, Whitefish River	Steel plate girder	74′	Sellars Road 2 mi. S. of Hymers	Gillies	10–11	V	Thunder Bay	19
Service Road–Overpass	Concrete rigid frame	35′-9″	Q.E.W. Burlington–Hamilton	Town of Burlington	18	II	Halton	4

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Sheba, C.P.R. Overhead	Continuous steel beam	64′-6″ /86′ /64′-6″	Hwy. 17 T.C.H. 10.4 mi. E. of English River	Pyramid	2	IV	Thunder Bay	19
Spadina Bridge No. 4	Post-tensioned deck slab	92′ /156′ /82′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 5	Post-tensioned deck slab	50′ /105′ /105′ /76′ 105′ /50′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 11	Post-tensioned deck slab	65′-6″ /100′ /97′ 91′-6″ /120′ /112′ 83′-8¼″ /86′-8⅞″ 125′ /115′ /115′ 115′ /120′ /84′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 12	Post-tensioned deck slab	60′ /85′-5″ /79′ 77′ /96′-7″ /80′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 13	Post-tensioned deck	60′ /84′-2⅞″ 77′-2½″ /78′-11″ 96′-7⅞″ /60′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 14	Post-tensioned deck slab	60′ /84′-6″ /77′ 77′ /96′-6″ /60′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 15	Post-tensioned deck slab	60′ /84′-6″ /77′ 77′ /96′-6″ /60′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 22	Post-tensioned deck slab	60′ /127′ /76′-1⅛″ 66′-6″ /113′ /60′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 23	Post-tensioned deck slab	90′ /120′ /130′ /90′	Hwy. 401	North York	....	....	York	6
Spadina Bridge No. 24	Prestressed concrete slab	75′ /150′ /75′	Hwy. 401	North York	....	....	York	6
Squaw River	Prestressed concrete beam	60′	Hwy. 36 Lindsay–Burleigh Falls	Harvey	20–21	XI	Peterborough	7
St. Johns Bridge, Medway River	Continuous steel beam	50′ /62′-6″ /50′	Hwy. 4 at Arva	London	16–17	VII	Middlesex	2
Stoney Creek	Prestressed concrete	40′	Hwy. 3 Jarvis–Cayuga	Walpole	19	VII-VIII	Haldimand	4
Summerstown Road	Prestressed concrete, semi-continuous	35′ /73-9″ /73′-9″ 35′	Hwy. 401 Cornwall–Lancaster	Charlottenburg	13–14	II FT.	Glengarry	9

Name	Type	Span	Road	Township	Lot	Concession	County or District	District
Sussex Drive	Prestressed concrete slab (dual)	60′/130′/60′	Ottawa Approach to Macdonald-Cartier Br.	City of Ottawa	....	....	Carleton	9
Sutherland Creek	Steel beam, simply supported	100′/140′/140′ 100′	Hwy. 401 Bainsville–Quebec Bdry.	Lancaster	9–10	I	Glengarry	9
Sutherland Creek	Continuous steel beam	25′/42′/25′	Hwy. 401 Bainsville–Quebec Bdry.	Lancaster	9–10	I	Glengarry	9
Sutherland Creek, South Service Road	Continuous steel beam	25′/42′/25′	Hwy. 401 Bainsville–Quebec Bdry.	Lancaster	10	I	Glengarry	9
Tansley, C.N.R. Overhead	Prestressed concrete beam, simply supported	40′/58′-6″/40′	Hwy. 5 Waterdown–Burlington	Town of Burlington	4–5	I N.D.	Halton	4
Township Road, Underpass	Continuous box girder	100′/100′	Hwy. 401 Bainsville-Quebec Bdry.	Lancaster	1–2	I	Glengarry	9
Twenty Mile Creek (widening)	Continuous steel beam	39′-5″/50′/39′-5″	Q.E.W. St. Catharines–Hamilton	Louth	19	B.F.	Lincoln	4
Wawanosh Drain (widening)	Concrete rigid frame	50′	Hwys. 7 and 402 City of Sarnia	Sarnia	15	VI-VII	Lambton	1
Wendell Avenue Extension and Widening)	Concrete rigid frame	39′-11⅞″	Hwy. 401 Hwy. 401–Weston Road	North York	....	....	York	6
West Street	Prestressed concrete beam, semi-continuous	40′/59′/59′/40′	Hwy. 403 Cainsville–Brantford	City of Brantford	....	....	Brant	4
West ey Road	Prestressed concrete beam, simply supported	59′-5″/60′/60′ 66′/59′-5″	Hwys. 401 and 2 Lancaster–Quebec Bdry.	Lancaster	24–25	I	Glengarry	9
Wilson Avenue (widening)	Continuous steel plate girder	N. 64′-3⅝″ 65′-3″ S. 75′-3 7/16″/ 90′-0 1/16″	Hwy. 401 Bathurst St.–Avenue Rd.	North York	....	....	York	6
Wood Creek	Concrete rigid frame (dual)	27′	Hwy. 491 Bainsville–Quebec Bdry.	Lancaster	6	I	Glengarry	9
Wood Creek, North Service Road	Concrete rigid frame	27′	Hwy. 491 Bainsville–Quebec Bdry.	Lancaster	6	I	Glengarry	9

APPENDIX No. 2

Department Expenditures on King's Highways, Secondary Highways, Tertiary Roads, Access Roads, Connecting Links, Development Roads, Roads in Unincorporated Townships, by County and District

April 1, 1964 to March 31, 1965

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
BRANT:			
Highway 2	$ 25,160.15	$ 93,364.30	$ 118,524.45
" 5	2,796.62	31,896.25	34,692.87
" 24	33,408.10	38,538.08	71,946.18
" 24A	75,798.31	13,700.73	89,499.04
" 53	797.04	45,931.37	46,728.41
" 54	25,383.91	41,573.31	66,957.22
" 99	145,181.74	11,499.90	156,681.64
" 403	1,992,139.93	.....	1,992,139.93
Miscellaneous Surveys	207.84	.....	207.84
Special Agreement:			
Jct. Hwy. 6–Brantford Township	Cr. 14,617.11	.....	Cr. 14,617.11
Sidewalk:			
Village of Burford	262.20	.....	262.20
Connecting Link:			
Town of Paris	23,777.48	305.91	24,083.39
Development Road:			
Cockshutt Road	151,333.00	.....	151,333.00
Lands and Buildings	11,907.36	585.55	12,492.91
	$2,473,536.57	$ 277,395.40	$2,750,931.97
BRUCE:			
Highway 4	$ 143,003.44	$ 58,030.84	$ 201,034.28
" 6	21,301.04	157,955.88	179,256.92
" 9	21,215.37	76,478.13	97,693.50
" 21	325,342.88	124,443.85	449,786.73
" 86	.....	21,345.51	21,345.51
Connecting Links:			
Town of Kincardine	8,344.10	1,784.14	10,128.24
Village of Lucknow	4,935.17	1,441.10	6,376.27
Village of Mildmay	.....	660.61	660.61
Town of Port Elgin	2,128.29	1,036.29	3,164.58
Village of Teeswater	.....	1,093.80	1,093.80
Town of Walkerton	.....	1,532.08	1,532.08
Town of Wiarton	.....	836.64	836.64
Development Roads:			
Hanover–Chesley	198,941.59	.....	198,941.59
County Road No. 3 (part)	155,938.62	.....	155,938.62
Lands and Buildings	3,178.06	3,041.35	6,219.41
	$ 884,328.56	$ 449,680.22	$1,334,008.78
CARLETON:			
Highway 7	$ 233,078.34	$ 40,880.53	$ 273,958.87
" 15	1,015.85	27,283.82	28,299.67
" 16	397,362.93	63,419.66	460,782.59
" 17	649,174.58	175,071.24	824,245.82
" 29	5,878.31	6,364.52	12,242.83
" 31	28,059.18	77,290.72	105,349.90
" 44	2,873.29	15,437.74	18,311.03
Ottawa Queensway	3,413,102.00	1,779.70	3,414,881.70
Macdonald-Cartier Bridge	2,243,555.32	.....	2,243,555.32
Miscellaneous Surveys	17,584.21	.....	17,584.21
Storm Sewers:			
Nepean Bay	24,854.31	.....	24,854.31

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
CARLETON (Cont'd):			
Connecting Link:			
City of Ottawa	$ 229,806.85	$	$ 229,806.85
Development Roads:			
Fitzroy Station Road	25,469.48	.....	25,469.48
Panmure–Highway 44	97.56	.....	97.56
River Road	162,121.11	.....	162,121.11
Dwyers Hill Road	92,388.46	.....	92,388.46
March–Torbolton Townline (part)	749.74	.....	749.74
Lands and Buildings	12,947.30	4,017.43	16,964.73
	$7,540,118.82	$ 411,545.36	$7,951,664.18
DUFFERIN:			
Highway 9	$ 13,228.62	$ 56,073.62	$ 69,302.24
" 10	323,283.86	69,864.89	393,148.75
" 24	13,506.44	38,167.09	51,673.53
" 89	893.29	39,753.63	40,646.92
" 104	.....	6,287.84	6,287.84
" 136	.....	1,123.97	1,123.97
Connecting Links:			
Town of Orangeville	38,285.28	3,124.78	41,410.06
Village of Shelburne	.....	1,644.38	1,644.38
Development Roads:			
Shelburne–Mount Forest	18.00	.....	18.00
Hornings Mills–Terra Nova (part)	47,540.64	.....	47,540.64
Hornings Mills Bridge	222.36	.....	222.36
County Road No. 3	131,597.85	.....	131,597.85
County Road No. 10	16,557.39	.....	16,557.39
Lands and Buildings	21,123.60	450.37	21,573.97
	$ 606,257.33	$ 216,490.57	$ 822,747.90
ELGIN:			
Highway 3	$ 455,327.88	$ 139,461.64	$ 594,789.52
" 4	6,417.89	49,828.48	56,246.37
" 19	2,144.14	29,801.95	31,946.09
" 73	130,580.67	32,702.39	163,283.06
" 74	131,209.36	15,560.12	146,769.48
" 76	7,302.07	14,964.85	22,266.92
" 401 (M.-C. F.)	3,013,512.61	108,934.17	3,122,446.78
Sidewalks:			
Village of Port Stanley	14,425.06	.....	14,425.06
Connecting Links:			
Town of Aylmer	.....	10,143.65	10,143.65
Village of Port Burwell	.....	2,062.34	2,062.34
City of St. Thomas	.....	189.53	189.53
Development Roads:			
County Road No. 39 (part)	25,495.67	.....	25,495.67
County Road No. 36 (part)	29,146.00	.....	29,146.00
Griffin's Corner Easterly	7,398.44	.....	7,398.44
Lands and Buildings	18,277.47	983.16	19,260.63
	$3,841,237.26	$ 404,632.28	$4,245,869.54
ESSEX:			
Highway 2	$ 514,221.88	$ 60,140.46	$ 574,362.34
" 3	28,395.59	87,720.40	116,115.99
" 3B	6,330.51	23,276.27	29,606.78
" 18	169,457.11	60,551.79	230,008.90
" 18A	8,926.76	20,846.18	29,772.94
" 39	337,890.44	31,257.49	369,147.93
" 77	28,131.38	28,172.45	56,303.83
" 98	96,218.61	38,877.23	135,095.84
" 107	8,020.95	1,312.92	9,333.87
" 114	5,447.50	877.67	6,325.17
" 401 (M.-C. F.)	58,683.11	123,340.24	182,023.35

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
ESSEX (Cont'd):			
E. C. Rowe Boulevard (Windsor)	$ 3,250.00	$	$ 3,250.00
Miscellaneous Surveys	554.08	.....	554.08
Sidewalk:			
Township of Sandwich East	1,292.93	.....	1,292.93
Storm Sewers:			
City of Windsor	361.76	.....	361.76
Connecting Links:			
Town of Amherstburg	.....	303.02	303.02
Village of Belle River	.....	374.29	374.29
Town of Essex	.....	596.12	596.12
Town of Harrow	11,408.41	296.48	11,704.89
Town of Kingsville	.....	542.41	542.41
Town of Leamington	3,331.50	462.87	3,794.37
Town of Ojibway	.....	1,453.65	1,453.65
City of Windsor	725.34	.....	725.34
Development Road:			
Kent County Road No. 1 (part)	73,104.86	.....	73,104.86
Lands and Buildings	10,083.82	2,222.80	12,306.62
	$1,365,836.54	$ 482,624.74	$1,848,461.28
FRONTENAC:			
Highway 2	$ 48,535.97	$ 70,380.83	$ 118,916.80
" 7	42,717.71	61,980.47	104,698.18
" 15	2,657.30	63,596.86	66,254.16
" 33	5,708.39	11,031.45	16,739.84
" 38	80,360.47	121,923.01	202,283.48
" 41	5,586.68	19,102.15	24,688.83
" 95	5,854.95	21,830.78	27,685.73
" 96	129,907.88	43,688.20	173,596.08
" 401 (M.-C.F.)	234,553.19	628,872.47	863,425.66
Ferries	10,216.09	160,882.57	171,098.66
Sec. Hwy. 506	151,917.16	53,645.13	205,562.29
" " 509	59,531.84	32,576.66	92,108.50
Miscellaneous	1,321.43	.....	1,321.43
Connecting Link:			
City of Kingston	18,440.16	.....	18,440.16
Development Roads:			
McKnight Road	99,721.92	.....	99,721.92
Snow Road–Ompah	67,404.00		67,404.00
Parham–Wagarville	70,420.10	.....	70,420.10
Bellrock Road (County Road No. 7)	91,158.50	.....	91,158.50
Crow Lake Easterly	9,984.68	.....	9,984.68
Otter Lake Northerly (part)	31,055.91	.....	31,055.91
County Road No. 16A (part)	87,267.41	.....	87,267.41
Kennebec Township Road (part)	2,305.79	.....	2,305.79
County Road No. 9 (part)	14,875.24	.....	14,875.24
Lands and Buildings	21,780.65	7,181.75	28,962.40
	$1,293,283.42	$1,296,692.33	$2,589,975.75
GREY:			
Highway 4	$ 102,333.77	$ 67,635.99	$ 169,969.76
" 6	726,537.93	140,002.25	866,540.18
" 10	5,549.99	75,237.95	80,787.94
" 24	146.29	10,644.37	10,790.66
" 26	31,735.75	87,751.41	119,487.16
" 89	5,613.61	24,959.42	30,573.03
Miscellaneous Surveys	6,890.91	.....	6,890.91
Connecting Links:			
Village of Chatsworth	14,438.76	990.72	15,429.48
Town of Durham		3,731.84	3,731.84
Village of Flesherton	.....	7,268.60	7,268.60
Town of Hanover	.....	1,256.46	1,256.46
Village of Markdale	.....	568.56	568.56
Town of Meaford	115,564.78	2,609.54	118,174.32

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
GREY (Cont'd):			
City of Owen Sound	$ 28,694.45	$	$ 28,694.45
Town of Thornbury	.....	916.16	916.16
Development Roads:			
Flesherton–Singhampton Road	186.60	.....	186.60
Hanover–Chesley	198,941.58	.....	198,941.58
County Roads No. 18 and No. 5 (part)	171,628.58	.....	171,628.58
County Road No. 13	29,631.68	.....	29,631.68
Lands and Buildings	1,568.27	4,516.03	6,084.30
	$1,439,462.95	$ 428,089.30	$1,867,552.25
HALDIMAND:			
Highway 3	$ 121,482.01	$ 137,679.86	$ 259,161.87
" 6	62,788.72	58,516.24	121,304.96
" 54	1,370.57	35,947.66	37,318.23
" 56	1,642.84	16,842.27	18,485.11
Special Agreement:			
Jct. Hwy. 6–Brantford Township	1,674.44	.....	1,674.44
Miscellaneous Surveys	763.90	.....	763.90
Sidewalk:			
Township of North Cayuga	1,707.06	.....	1,707.06
Connecting Links:			
Town of Caledonia	21,219.06	2,019.50	23,238.56
Village of Cayuga	.....	686.36	686.36
Town of Dunnville	.....	1,126.99	1,126.99
Village of Hagersville	.....	918.53	918.53
Village of Jarvis	.....	827.63	827.63
Development Roads:			
County Road No. 2 (part)	12,942.67	.....	12,942.67
Old Indian Line	224,823.61	.....	224,823.61
Lands and Buildings	160.30	.....	160.30
	$ 450,575.18	$ 254,565.04	$ 705,140.22
HALTON:			
Highway 2	$ 225,339.39	$ 110,236.67	$ 335,576.06
" 5	317,294.06	93,540.18	410,834.24
" 6	29,862.38	5,181.51	35,043.89
" 7	5,422.99	37,931.70	43,354.69
" 20	669.68	.....	669.68
" 25	553,248.62	73,274.23	626,522.85
" 122	11,980.43	20,110.82	32,091.25
" 401 (M.-C.F.)	12,333.37	130,806.16	143,139.53
" 403	242,794.44	58,549.93	301,344.37
Queen Elizabeth Way	1,736,829.06	373,620.20	2,110,449.26
Special Agreement:			
Beach Boulevard (Burlington)	3,008.74	.....	3,008.74
Miscellaneous Surveys	235.82	.....	235.82
Storm Sewers:			
Town of Burlington	3,331.76	.....	3,331.76
Connecting Links:			
Town of Acton	27,103.98	2,229.15	29,333.13
Town of Burlington	94.16	580.24	674.40
Town of Georgetown	165,435.80	2,563.33	167,999.13
Town of Milton	.....	988.80	988.80
Town of Oakville	10,734.73	855.00	11,589.73
Development Road:			
Concession I/II Road	9,864.52	.....	9,864.52
Lands and Buildings	788.62	2,389.60	3,178.22
	$3,356,372.55	$ 912,857.52	$4,269,230.07
HASTINGS:			
Highway 2	$1,718,470.00	$ 69,146.96	1,787,616.96
" 7	658,353.40	69,857.93	728,211.33
" 14	124,453.44	94,756.03	219,209.47

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
HASTINGS (Cont'd):			
" 28	$ 89.06	$ 20,826.24	$ 20,915.30
" 33	17,473.99	28,179.66	45,653.65
" 37	309,221.58	72,970.49	382,192.07
" 41	68,944.65	.....	68,944.65
" 62	135,984.44	160,247.98	296,232.42
" 121	.....	3,031.77	3,031.77
" 127	13,387.74	19,696.94	33,084.68
" 401 (M.-C.F.)	578,395.44	117,221.50	695,616.94
Sec. Hwy. 500	129,902.35	45,053.20	174,955.55
" " 502	.....	4,887.35	4,887.35
" " 504	138.61	.....	138.61
" " 517	2,382.60	13,983.29	16,365.89
" " 620	85,159.71	30,990.93	116,150.64
Sidewalk:			
Township of Thurlow	1,424.24	.....	1,424.24
Connecting Links:			
City of Belleville	14,886.91	7,891 30	22,778.21
Town of Desoronto	.....	218.14	218.14
Village of Frankford	.....	52.21	52.21
Village of Madoc	51,832.25	1,381,22	53,213.47
Village of Marmora	7,911.94	627.26	8,539.20
Village of Stirling	9,121.16	174.31	9,295.47
Village of Tweed	.....	675.62	675.62
Development Roads:			
Sideroad 15/16	8,057.59	.....	8,057.59
County Road No. 1 (part)	434,157.93	.....	434,157.93
Musclow–Greenview Road (part)	122,223.98	.....	122,223.98
Provost Corners Northerly	20,621.74	.....	20,621.74
Bowens Corners Southerly	11,633.55	.....	11,633.55
Beaver Creek Bridge	39,869.78	.....	39,869.78
County Road No. 4 Frankford–Hwy. 401	8,324.31	.....	8,324.31
Balsam Lake–Jones Boundary	195,009.24	.....	195,009.24
Lands and Buildings	80,859.92	10,272.07	91,131.99
	$4,848,291.55	$ 772,142.40	$5,620,433.95
HURON:			
Highway 4	$ 377,233.66	$ 133,953.93	$ 511,187.59
" 8	2,010.21	69,130.75	71,140.96
" 9	2,034.02	3,066.70	5,100.72
" 21	280,536.08	96,528.68	377,064.76
" 23	7,844.32	8,879.25	16,723.57
" 81	92,499.47	17,155.95	109,655.42
" 83	4,621.84	44,795.83	49,417.67
" 84	567.91	17,785.32	18,353.23
" 86	10,692.30	63,611.96	74,304.26
" 87	7,327.46	36,836.31	44,163.77
Connecting Links:			
Town of Clinton	.....	2,617.59	2,617.59
Town of Exeter	40,156.01	3,378.63	43,534.64
Town of Goderich	.....	773.08	773 08
Town of Seaforth	33,816.82	440.73	34,257.55
Town of Wingham	.....	2,464.19	2,464.19
Development Roads:			
Brussels–Hwy. No. 86	243,204.53	.....	243,204.53
Seaforth–Brussels	106,400.74	.....	106,400.74
Stephen–McGillivary Townline	1,077.14	.....	1,077.14
Huron County Road No. 4	16,241.41	.....	16,241.41
Concession II, III (part)	253.73	.....	253.73
Lands and Buildings	10,395.26	3,882.75	14,278.01
	$1,236,912.91	$ 505,301.65	$1,742,214.56
KENT:			
Highway 2	$ 14,437.86	$ 58,625.43	$ 73,063.29
" 3	92,399.70	77,440.12	169,839.82

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
KENT (Cont'd):			
Highway 21	$ 2,063.98	$ 54,281.36	$ 56,345.34
" 40	33,915.20	57,673.37	91,588.57
" 78	742.14	49,094.25	49,836.39
" 79	4,356.37	5,760.22	10,116.59
" 98	18,797.49	33,221.47	52,018.96
" 401 (M.-C.F.)	3,198,200.44	90,479.47	3,288,679.91
Connecting Links:			
Town of Blenheim	11,229.30	1,172.26	12,401.56
Town of Bothwell	.....	963.23	963.23
City of Chatham	6,723.79	.....	6,723.79
Town of Dresden	.....	997.39	997.39
Town of Ridgetown	.....	1,041.25	1,041.25
Village of Thamesville	.....	548.98	548.98
Town of Tilbury	18,338.35	228.93	18,567.28
Town of Wallaceburg	1,060.82	7,149.37	8,210.19
Village of Wheatley	.....	323.89	323.89
Development Roads:			
Paincourt Easterly	9,224.48	.....	9,224.48
County Road No. 1 (part)	73,123.42	.....	73,123.42
Proposed Kent County Road	12,393.54	.....	12,393.54
Lands and Buildings	37,821.17	4,243.74	42,064.91
	$3,534,828.05	$ 443,244.73	$3,978,072.78
LAMBTON:			
Highway 7	$ 255,032.22	$ 118,958.93	$ 373,991.15
" 21	154,158.98	86,271.27	240,430.25
" 22	66.88	3,473.03	3,539.91
" 40	94,825.64	59,149.04	153,974.68
" 40A	314,728.93	14,740.62	329,469.55
" 40C	6,396.89	525.85	6,922.74
" 78	.....	20,378.05	20,378.05
" 79	1,854.66	55,145.62	57,000.28
" 80	40,482.32	39,038.84	79,521.16
" 81	2,117.80	.....	2,117.80
" 82	162.97	9,721.94	9,884.91
" 402	1,334,498.84	21,254.46	1,355,753.30
Connecting Links:			
Town of Forest	53,157.85	828.10	53,985.95
Village of Thedford	.....	992.38	992.38
Village of Watford	.....	453.25	453.25
Village of Wyoming	.....	572.80	572.80
Development Roads:			
Alvinston–Courtright	34.36	.....	34.36
Hwy. 402–County Road No. 4	328,559.16	.....	328,559.16
Hwy. 7 (Arkona)–Middlesex Township Line	215,816.91	.....	215,816.91
Tri County Bridge–Hwy. 21	4,932.07	.....	4,932.07
Lands and Buildings	33,866.20	3,000.68	36,866.88
	$2,840,692.68	$ 434,504.86	$3,275,197.54
LANARK:			
Highway 7	$ 78,068.59	$ 117,342.83	$ 195,411.42
" 15	7,458.32	46,001.80	53,460.12
" 29	47,899.61	33,645.57	81,545.18
" 43	134,797.74	52,279.09	187,076.83
" 44	17,708.21	3,623.55	21,331.76
Sec. Hwy. 511	18,188.79	23,196.57	41,385.36
Connecting Link:			
Town of Almonte	70,536.28	2,867.89	73,404.17
Development Roads:			
Fallbrook Westerly	69,229.03	.....	69,229.03
Brightside–Hopetown Road	9,372.18	.....	9,372.18
Innisville Easterly	12,373.25	.....	12,373.25
Second Line Road	163,551.75	.....	163,551.75
County Road No. 15–Waba	297,321.38	.....	297,321.38

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
LANARK (Cont'd):			
Black Creek Road	$ 2,328.98	$	$ 2,328.98
Lands and Buildings	6,744.99	3,408.78	10,153.77
	$ 935,579.10	$ 282,366.08	$1,217,945.18
LEEDS AND GRENVILLE:			
Highway 2	$ 629,228.05	$ 176,471.78	$ 805,699.83
" 15	5,535.81	116,106.16	121,641.97
" 16	1,331.25	87,933.48	89,264.73
" 29	18,518.42	50,474.59	68,993.01
" 32		58,920.57	58,920.57
" 42	680,835.75	83,162.09	763,997.84
" 43	1,639.52	51,288.86	52,928.38
" 137	6,805.13	3,313.89	10,119.02
" 401 (M.-C.F.)	1,399,828.58	204,325.06	1,604,153.64
Special Agreement:			
County Road No. 15 North of Maitland	4,200.00		4,200.00
Connecting Links:			
Village of Athens	152,136.43	412.13	152,548.56
City of Brockville	40,385.38		40,385.38
Village of Kemptville	21,538.20	489.78	22,027.98
Village of Merrickville		2,199.44	2,199.44
Village of Westport		372.20	372.20
Development Roads:			
Escott–Rockport Road	60,297.73		60,297.73
Warburton–Long Point	70,350.87		70,350.87
County Road No. 16 (part)	136,024.05		136,024.05
Hwy. 16–County Road No. 18	2,718.03		2,718.03
Yonge Boundary–Hwy. 29	18,225.01		18,225.01
County Road No. 71	7,319.60		7,319.60
Township Boundary Westerly–Oakleaf	34,186.62		34,186.62
County Road No. 5B Westerly–Twp. Bdry	14,043.46		14,043.46
Sideroad 6/7	9,951.64		9,951.64
Mallorytown Landing Road	14,075.16		14,075.16
Lands and Buildings	16,305.81	3,256.97	19,562.78
	$3,345,480.50	$ 838,727.00	$4,184,207.50
LENNOX AND ADDINGTON:			
Highway 2	$ 147,000.10	$ 56,030.46	$ 203,030.56
" 7	270,219.43	22,946.58	293,166.01
" 33	16,445.50	82,373.89	98,819.39
" 41	342,314.50	136,004.27	478,318.77
" 133	78,480.35	4,178.38	82,658.73
" 401 (M.-C.F.)	3,414,978.80	105,409.22	3,520,388.02
Ferries		84,989.18	84,989.18
Sec. Hwy. 500	28,964.39	19,150.05	48,114.44
" " 502		10,803.42	10,803.42
Miscellaneous Surveys	1,296.77		1,296.77
Connecting Links:			
Village of Bath	13,831.87	248.87	14,080.74
Town of Napanee		239.50	239.50
Development Roads:			
Centreville–Enterprises	163,223.38		163,223.38
Hay Bay Road	12,765.31		12,765.31
Tamworth Easterly	3,894.64		3,894.64
County Road No. 5 (part)	9,200.67		9,200.67
Centreville–Hwy. 401 (M.-C.F.)	372,490.58		372,490.58
Flinton–Hastings Boundary	62,748.78		62,748.78
Dorland–Sir John A. Macdonald's Monument	1,816.73		1,816.73
Concession V/VI Road (part)	33,952.64		33,952.64
Lands and Buildings	44,495.98	4,470.91	48,966.89
	$5,018,120.42	$ 526,844.73	$5,544,965.15

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
LINCOLN:			
Highway 8	$ 242,646.15	$ 105,821.76	$ 348,467.91
" 8A	1,963 69	8,370.30	10,333.99
" 20	88,845.00	64,133.95	152,978.95
" 57	378.79	6,170.35	6,549.14
" 58	8,677.72	.....	8,677.72
" 405	92,229.97	24,317.91	116,547.88
" 406	862,078.85	.....	862,078.85
Queen Elizabeth Way	2,577,713.78	254,609.06	2,832,322.84
Welland Canal Tunnel	200.00	.....	200.00
Carleton St. Tunnel (St. Catharines)	267,869.03	.....	267,869 03
Miscellaneous Surveys	2,075.17	.....	2,075.17
Connecting Links:			
Village of Beamsville	.....	1,367.29	1,367.29
Town of Grimsby	.....	920.63	920.63
City of St. Catharines	372,805.43	.....	372,805.43
Development Roads:			
Lincoln–Welland	143,822.29	.....	143,822.29
St. David's Road (part)	83,139.32	.....	83,139.32
Coon Road (part)	95,788.50	.....	95.788.50
South Chippawa Road	4,325.30	.....	4,325.30
Lands and Buildings	49,259.88	5,592.38	54,852.26
	$4,893,818.87	$ 471,303.63	$5,365,122.50
MIDDLESEX:			
Highway 2	$ 22,900.03	$ 108.792.72	$ 131,692.75
" 4	576,759.89	76,000.11	652,760.00
" 7	20,957.88	101,451.64	122,409.52
" 22	34,297.88	54,150.05	88,447.93
" 23	1,346.41	16,788.38	18,134.79
" 73	337.72	11,195.19	11,532.91
" 74	18,346.05	13,396.12	31,742.17
" 76	87.27	1,657.63	1,744.90
" 80	10,370.35	16,420.48	26,790.83
" 81	44,237.03	90,758.36	134,995.39
" 126	311,610.80	14,710.57	326,321.37
" 135	14.70	7,874.72	7,889.42
" 401 (M.-C.F.)	517,510.36	126,551.77	644,062.13
Connecting Links:			
City of London	.....	801.15	801.15
Village of Lucan	858.32	1,330.98	2,189.30
Town of Parkhill	.....	1,100.24	1,100.24
Town of Strathroy	28,897.20	71.28	28,968.48
Development Roads:			
Middlesex County Line–Hwy. 81	416,644.09	.....	416,644.09
Granton Northerly–Township Bdry.	17,631.84	.....	17,631.84
Stephen-McGillivary Townline	1,077.14	.....	1,077.14
Lands and Buildings	40,363.62	7,653.05	48,016.67
Weigh Scales	884.70	.....	884.70
	$2,065,133.28	$ 650,704.44	$2,715,837.72
NORFOLK:			
Highway 3	$ 68,100.32	$ 80,256.67	$ 148,356.99
" 6	29,483.34	20,232.82	49,716.16
" 19	1,035.26	7,569.85	8,605.11
" 24	540,893.34	69,580.45	610,473.79
" 24A	140,340.76	10,968.54	151,309.30
" 59	34,563.97	60,380.32	94,944.29
Miscellaneous Surveys	105.92	.....	105.92
Connecting Links:			
Town of Delhi	191,267.69	1,035.96	192,303.65
Town of Simcoe	20,874.22	1,414.94	22,289.16

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
NORFOLK (Cont'd):			
Development Road:			
County Road No. 9–Hwy. 24 Southerly	$ 154,638.28	$	$ 154,638.28
Lands and Buildings	1,584.32	618.74	2,203.06
	$1,182,887.42	$ 252,058.29	$1,434,945.71
NORTHUMBERLAND AND DURHAM:			
Highway 2	$ 56,775.12	$ 200,464.65	$ 257,239.77
" 7	11.34	1,282.45	1,293.79
" 7A	661.47	68,491.66	69,153.13
" 28	5,750.93	73,943.10	79,694.03
" 30	21,163.32	68,865.86	90,029.18
" 33	10,906.42	10,974.83	21,881.25
" 35	17,482.52	86,892.76	104,375.28
" 45	5,076.38	66,532.18	71,608.56
" 106		8,313.48	8,313.48
" 115	8,305.92	57,875.86	66,181.78
" 401 (M.-C.F.)	125,399.60	479,128.10	604,527.70
Miscellaneous Surveys	24,746.59		24,746.59
Connecting Links:			
Town of Bowmanville		173.54	173.54
Village of Brighton		363.87	363.87
Town of Campbellford		475.45	475.45
Town of Cobourg	50,603.63	1,972.05	52,575.68
Village of Colborne		103.48	103.48
Village of Hastings	Cr. 7,680.15	543.31	Cr. 7,136.84
Village of Newcastle	1,469.04	622.35	2,091.39
Town of Port Hope	112,222.01	1,678.04	113,900.05
Town of Trenton	176,498.08		176,498.08
Development Roads:			
Morganston–Cuffs Corners	3,595.78		3,595.78
Concession II Road	132,727.86		132,727.86
County Road No. 18–Hwy. 401 (M.-C.F.)	173,215.91		173,215.91
Wooler Road	123,658.68		123,658.68
Healey's Falls Road	225,877.07		225,877.07
Roseneath Easterly	11,556.33		11,556.33
Base Line Road	1,034.97		1,034.97
Lots 6/7, Concession B, A and 1	3,360.00		3,360.00
Lands and Buildings	112,505.27	7,624.22	120,129.49
	$1,396,924.09	$1,136,321.24	$2,533,245.33
ONTARIO:			
Highway 2	$ 299,832.84	$ 70,427.01	$ 370,259.85
" 7	24,701.20	157,111.50	181,812.70
" 7A	614.58	11,031.31	11,645.89
" 12	549,436.21	104,805.91	654,242.12
" 47	4,579.70	53,683.07	58,262.77
" 48	33,326.05	21,426.90	54,752.95
" 69	100.00	49,310.91	49,410.91
" 401 (M.-C.F.)	30,206.21	209,026.65	239,232.86
" 404	14.36		14.36
" 407	148.69		148.69
Sec. Hwy. 503	189.07		189.07
Special Agreement:			
Victoria Street (Town of Whitby)	10,498.73		10,498.73
Sidewalks:			
Township of Mara	441.66		441.66
Township of Pickering	1,480.18		1,480.18
Connecting Links:			
Village of Beaverton		482.09	482.09
City of Oshawa	724,910.17		724,910.17
Village of Port Perry		1,103.72	1,103.72
Town of Uxbridge		1,634.49	1,634.49
Town of Whitby	14,612.55	6,344.31	20,956.86

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
ONTARIO (Cont'd):			
Thickson Road (part)	$ 187,683.69	$	$ 187,683.69
County Road No. 21 (part)	11,804.04	.....	11,804.04
Lands and Buildings	17,559.38	605.66	18,165.04
	$1,912,139.31	$ 686,993.53	2,599,132.84
OXFORD:			
Highway 2	$ 11,034.68	$ 108,323.66	$ 119,358.34
" 3	1,169.55	6,088.14	7,257.69
" 19	456,074.64	75,437.41	531,512.05
" 53	7,011.89	12,965.40	19,977.29
" 59	27,888.40	138,691.21	166,579.61
" 97	67,413.41	57,232.24	124,645.65
" 401 (M.-C.F.)	146,050.32	172,722.64	318,772.96
" 403	3,106.01	.....	3,106.01
Sidewalk:			
Twps. of E. Nissouri and N. Oxford	898.38	.....	898.38
Connecting Links:			
Town of Ingersoll	20,881.43	.....	20,881.43
Village of Tavistock	.....	971.87	971.87
City of Woodstock	3,326.51	476.64	3,803.15
Lands and Buildings	17,347.33	1,768.18	19,115.51
	$ 762,202.55	$ 574,677.39	$1,336,879.94
PEEL:			
Highway 2	Cr. $ 29,798.71	$ 70,271.27	$ 40,472.56
" 5	83,512.41	60,971.45	144,483.86
" 7	389,025.19	41,035.44	430,060.63
" 9	139,652.61	35,726.09	175,378.70
" 10	684,192.74	140,070.83	824,263.57
" 24	1,950.94	8,428.52	10,379.46
" 50	290,682.05	70,294.71	360,976.76
" 122	9,080.58	9,777.97	18,858.55
" 136	177,428.30	23,050.32	200,478.62
" 401 (M.-C.F.)	73,113.61	127,487.65	200,601.26
" 403	26,301.87	.....	26,301.87
" 407	1,007.61	.....	1,007.61
Queen Elizabeth Way	302,105.01	132,325.53	434,430.54
Dixon Rd. (Hwy. 27–Toronto Int'l Airport	25,621.01	.....	25,621.01
Toronto International Airport Road	3,845.98	.....	3,845.98
Miscellaneous Surveys	144.01	.....	144.01
Sidewalk:			
Township of Toronto	4,557.94	.....	4,557.94
Connecting Links:			
Village of Bolton	.....	319.89	319.89
Town of Brampton	14,465.85	3,371.69	17,837.54
Village of Port Credit	.....	4,758.93	4,758.93
Development Road:			
Twentieth Side Road	10,123.55	.....	10,123.55
Lands and Buildings	44,014.78	3,156.03	47,170.81
Weigh Scales	4,836.64	.....	4,836.64
	$2,255,863.97	$ 731,046.32	$2,986,910.29
PERTH:			
Highway 7	$ 74,603.89	$ 90,641.51	$ 165,245.40
" 8	476,394.83	54,229.29	530,624.12
" 19	39,567.45	316,581.90	356,149.35
" 23	259,545.89	113,607.36	373,153.25
" 59	315.24	8,830.85	9,146.09
" 83	360.41	5,184.39	5,544.80
" 86	1,349.14	60,988.90	62,338.04
Connecting Links:			
Town of Listowell	110.89	2,497.05	2,607.94
Village of Milverton	.....	943.00	943.00

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
PERTH (Cont'd):			
Town of Mitchell	$ 234,286.97	$ 2,106.26	$ 236,393.23
Town of Stratford	178,948.07	181.80	179,129.87
Development Road:			
County Road No. 6–Hwys. 23 and 19	272,218.12	.....	272,218.12
Lands and Buildings	39,351.10	6,112.73	45,463.83
	$1,577,052.00	$ 661,905.04	$2,238,957.04
PETERBOROUGH:			
Highway 7	$ 208,006.82	$ 119,712.79	$ 327,719.61
" 7A	.....	9,006.39	9,006.39
" 28	29,847.94	101,218.98	131,066.92
" 30	227.72	6,200.49	6,428.21
" 36	464,938.41	30,902.36	495,840.77
" 45	2,107.50	9,878.51	11,986.01
" 115	4,072.16	1,318.22	5,390.38
" 121	.....	4,609.47	4,609.47
Sec. Hwy. 503	.....	1,900.81	1,900.81
" " 504	80,573.60	33,981.26	114,554.86
" " 507	15,439.62	79,220.59	94,660.21
" " 620	129,848.81	42,273.78	172,122.59
" " 620A	.....	564.15	564.15
" " 649	.....	9,014.28	9,014.28
Miscellaneous Surveys	1,846.29	.....	1,846.29
Sidewalk:			
Twps. of Burleigh and Anstruther	461.34	.....	461.34
Connecting Links:			
Village of Lakefield	.....	199.88	199.88
Village of Norwood	.....	431.25	431.25
Development Roads:			
Hastings–Keene	2,620.40	.....	2,620.40
Havelock–Rush Point	78,915.45	.....	78,915.45
Ninth Line Road	155,528.92	.....	155,528.92
Sixth Line Road	331,006.07	.....	331,006.07
Stoney Lake North Shore Road	2,019.65	.....	2,019.65
County Road No. 3–Mud Lake I.R.	109,672.80	.....	109,672.80
Ennismore–Pigeon Lake	356,094.13	.....	356,094.13
Lands and Buildings	5,029.70	2,152.89	7,182.59
	$1,978,257.33	$ 452,586.10	$2,430,843.43
PRESCOTT AND RUSSELL:			
Highway 17	$ 110,886.00	$ 261,653.13	$ 372,539.13
" 34	2,084.20	21,753.98	23,838.18
Sidewalk:			
Township of N. Plantagenet	948.72	.....	948.72
Connecting Links:			
Town of Hawkesbury	.....	3,424.46	3,424.46
Town of Rockland	1,323.26	512.77	1,836.03
Village of Van leek Hill	.....	860.66	860.66
Development Roads:			
Rose Corners–Cambridge Bdry	Cr. 51.50	.....	Cr. 51.50
Vars–Osgoode Township Bdry	19,108.48	.....	19,108.48
County Road No. 13	67,404.94	.....	67,404.94
County Road No. 2	13,119.60	.....	13,119.60
County Road No. 18–Quebec Border	2,935.31	.....	2,935.31
Lands and Buildings	4,122.05	2,290.37	6,412.42
Weigh Scales	1,667.15	.....	1,667.15
	$ 223,548.21	$ 290,495.37	$ 514,043.58
PRINCE EDWARD:			
Highway 14	$ 18,244.00	$ 31,341.32	$ 49,585.32
" 33	299,224.72	67,346.80	366,571.52
" 41	80,330.72	22,431.02	102,761.74
Ferries	.....	84,989.19	84,989.19

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
PRINCE EDWARD (Cont'd):			
Miscellaneous Surveys	$ 10,762.48	$	$ 10,762.48
Connecting Link:			
Town of Picton	.....	374.22	374.22
Development Road:			
County Road No. 15	388,063.59	.....	388,063.59
Lands and Buildings	26,321.30	372.98	26,694.28
	$ 882,946.81	$ 206,855.53	$1,029,802.34
RENFREW:			
Highway 17	$ 601,315.71	$ 377,214.49	$ 978,530.20
" 29	.....	1,109.38	1,109.38
" 41	339,163.50	89,578.15	428,741.65
" 60	305,334.39	106,029.22	411,363.61
" 62	1,263,873.98	68,129.67	1,332,003.65
" 132	2,425.53	24,874.38	27,299.91
Sec. Hwy. 500	35,134.96	29,328.21	64,463.17
" " 508	107,163.90	43,301.06	150,464.96
" " 511	19,929.75	10,220.09	30,149.84
" " 512	50,603.59	52,266.66	102,870.25
" " 513	5,702.88	25,277.21	30,980.09
" " 515	60,491.62	51,237.97	111,729.59
" " 517	4,511.48	15,031.65	19,543.13
" " 521	12,353.95	19,927.31	32,281.26
" " 635	32,083.80	3,683.73	35,767.53
Connecting Links:			
Town of Arnprior	246,574.93	1,352.14	247,927.07
Village of Barry's Bay	.....	497.18	497.18
Village of Eganville	.....	443.92	443.92
Town of Pembroke	Cr. 11,735.87	11,431.39	Cr. 304.48
Town of Renfrew	2,088.20	1,024.70	3,112.90
Development Roads:			
Combermere–Rockingham	58,937.94	.....	58,937.94
Admaston–Bagot Townline	44,507.57	.....	44,507.57
Wilno–Radcliffe Boundary	3,941.81	.....	3,941.81
River Road, County Road No. 3	111,517.55	.....	111,517.55
Harwood Lake–Palmer Rapids	48,910.74	.....	48,910.74
Alice-Petawawa Townline	37,265.65	.....	37,265.65
Gillies Mill Road	96,567.03	.....	96,567.03
Lackey Creek Bridge	408.33	.....	408.33
Lands and Buildings	50,598.04	3,816.43	54,414.47
	$3,529,670.96	$ 935,774.94	$4,465,445.90
SIMCOE:			
Highway 9	$ 144,226.23	$ 34,604.36	$ 178,830.59
" 11	1,108,537.73	272,594.25	1,381,131.98
" 12	378,468.76	93,401.67	471,870.43
" 24	3,858.61	40,550.83	44,409.44
" 26	154,116.23	108,912.33	263,028.56
" 27	36,967.40	205,307.63	242,275.03
" 69	457.00	.....	457.00
" 88	904.83	17,826.83	18,731.66
" 89	4,405.23	56,217.31	60,622.54
" 90	17,614.00	44,819.31	62,433.31
" 91	29,830.57	21,107.17	50,937.74
" 92	894.65	26,638.33	27,532.98
" 93	1,884.05	53,705.94	55,589.99
" 103	146 53	9,566.44	9,712.97
" 120	.....	3,390.38	3,390.38
" 400	58,060.84	315,038.90	373,099.74
Miscellaneous Surveys	134.57	.....	134.57
Connecting Links:			
Town of Alliston	3,347.53	2,421.73	5,769.26
Town of Bradford	12,238.96	4,300.28	16,539.24
Village of Coldwater	.....	804.67	804.67
Town of Collingwood	Cr. 4,973.94	1,936.85	Cr. 3,037.09

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
SIMCOE (Cont'd):			
Village of Cookstown	$	$ 2,610.93	$ 2,610.93
Village of Elmvale	.....	924.78	924.78
Town of Orillia	35,005.85	8,980.37	43,986.22
Town of Penetang	.....	297.83	297.83
Village of Port McNicoll	.....	602.63	602.63
Town of Stayner	2,168.35	648.77	2,817.12
Village of Victoria Harbour	83,344.91	714.29	84,059.20
Village of Wasaga Beach	12,573.39	104.63	12,678.02
Development Roads:			
Champlain Road	93,409.71	.....	93,409.71
Oro–Medonte Boundary	23,156.45	.....	23,156.45
Essa–Innisfil Townline	38,913.13	.....	38,913.13
Sideroad 5/6	48,607.07	.....	48,607.07
Lovering–Severn Falls	558,384.88	.....	558,384.88
Tenth Sideroad	22,684.49	.....	22,684.49
Lands and Buildings	70,204.78	3,818.99	74,023.77
	$2,939,572.79	$1,331,848.43	$4,271,421.22
STORMONT, DUNDAS AND GLENGARRY:			
Highway 2	$ 25,109.04	$ 156,559.36	$ 181,668.40
" 31	14,078.64	94,790.97	108,869.61
" 34	12,134.14	59,999.65	72,133.79
" 43	21,829.61	101,726.89	123,556.50
" 401 (M.-C.F.)	5,106,955.22	210,135.97	5,317,091.19
Connecting Links:			
Town of Alexandria	.....	2,741.37	2,741.37
City of Cornwall	134,446.87	.....	134,446.87
Village of Winchester	.....	1,272.79	1,272.79
Development Roads:			
Concession IV/V (part)	8,008.50	.....	8,008.50
County Road No. 21	Cr. 89.00	.....	Cr. 89.00
Concession II–VIII	162,992.01	.....	162,992.01
Chesterville–Elma	329,945.95	.....	329,945.95
Brimston Easterly	3,755.43	.....	3,755.43
County Road No. 24 (part)	2,057.07	.....	2,057.07
Lands and Buildings	22,179.30	3,336.31	25,515.61
	$5,843,402.78	$ 630,563.31	$6,473,966.09
VICTORIA:			
Highway 7	$ 4,532.90	$ 107,389.70	$ 111,922.60
" 35	148,059.66	80,300.94	228,360.60
" 35A	35.43	3,695.66	3,731.09
" 36	4,846.42	44,789.51	49,635.93
" 46	128,697.64	46,480.32	175,177.96
" 48	.....	6,334.67	6,334.67
" 121	35,415.84	50,634.35	86,050.19
Sec. Hwy. 503	128,441.88	87,016.70	215,458.58
" " 505	5,724.00	27,514.06	33,238.06
" " 649	.....	9,345.64	9,345.64
Connecting Links:			
Village of Bobcaygeon	.....	1,410.05	1,410.05
Village of Fenelon Falls	.....	4,619.55	4,619.55
Town of Lindsay	12,404.33	3,878.37	16,282.70
Village of Omemee	7,624.84	607.46	8,232.30
Development Roads:			
Pigeon Lake Road–Verulam Twp	.....	60,575.05	60,575.05
Bobcaygeon–Fenelon Falls	48,624.79	.....	48,624.79
County Road No. 28 (part)	8,438.26	.....	8,438.26
Lands and Buildings	20,889.67	2,337.73	23,227.40
	$ 553,735.66	$ 536,929.76	$1,090,665.42
WATERLOO:			
Highway 7	$ 4,222.22	$ 77,360.78	$ 81,583.00
" 8	83,548.98	34,531.71	118,080.69

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
WATERLOO (Cont'd):			
" 24	$ 32,082.12	$ 18,067.84	$ 50,149.96
" 24A	.....	13,315.78	13,315.78
" 85	7,057.88	33,775.49	40,833.37
" 86	392,184.60	37,753.17	429,937.77
" 97	4,937.06	27,512.06	32,449.12
" 401 (M.-C.F.)	67,759.55	83,263.20	151,022.75
Kitchener-Waterloo Expressway	37,115.55	.....	37,115.55
Miscellaneous Surveys	11,771.45	.....	11,771.45
Connecting Links:			
Town of Elmira	.....	1,719.02	1,719.02
City of Galt	960.18	.....	960.18
Town of Hespeler	10,780.81	1,851.07	12,631.88
City of Kitchener	.....	125.85	125.85
Village of New Hamburg	.....	1,258.62	1,258.62
Town of Preston	59,364.84	7,893.28	67,258.12
Lands and Buildings	6,806.37	1,318.41	8,124.78
	$ 718,591.61	$ 339,746.28	$1,058,337.89
WELLAND:			
Highway 3	$ 181,834.63	$ 133,127.56	$ 314,962.19
" 3A	4,050.37	36,077.48	40,127.85
" 3C	759.24	29,552.36	30,311.60
" 8	123,094.61	7,818.34	130,912.95
" 20	193,239.07	41,430.47	234,669.54
" 57	81,782.16	12,538.77	94,320.93
" 58	33,134.64	57,424.45	90,559.09
" 405	23,159.93	4,952.10	28,112.03
" 406	32,772.53	.....	32,772.53
Queen Elizabeth Way	109,408.93	192,265.05	301,673.98
Welland Canal Tunnel	217,701.02	.....	217,701.02
Thorold Tunnel	298,165.79	.....	298,165.79
Carleton St. (St. Catharines)	172.64	.....	172.64
Miscellaneous Surveys	4,330.95	.....	4,330.95
Sidewalk:			
Township of Thorold	354.70	.....	354.70
Connecting Links:			
Town of Fort Erie	144.36	1,637.07	1,781.43
City of Niagara Falls	368,668.73	.....	368,668.73
Town of Port Colborne	.....	2,558.65	2,558.65
Development Road:			
Lincoln–Welland	175,566.68	.....	175,566.68
Lands and Buildings	3,553.25	1,963.06	5,516.31
	$1,851,894.23	$ 521,345.36	$2,373,239.59
WELLINGTON:			
Highway 6	$ 760,215.86	$ 125,693.50	$ 885,909.36
" 7	8,094.56	37,633.86	45,728.42
" 9	18,179.56	75,231.28	93,410.84
" 23	694.13	5,139.22	5,833.35
" 24	65,626.48	65,070.23	130,696.71
" 25	86.11	17,398.68	17,484.79
" 86	246,412.38	57,642.74	304,055.12
" 87	11,160.64	13,803.38	24,964.02
" 89	2,804.47	51,535.84	54,340.31
" 401 (M.-C.F.)	18,116.16	88,639.45	106,755.61
Connecting Links:			
Village of Arthur	.....	1,643.73	1,643.73
Town of Georgetown	.....	841.56	841.56
Village of Erin	.....	995.35	995.35
Town of Fergus	24,014.32	749.57	24,763.89
City of Guelph	128,554.11	.....	128,554.11
Town of Harriston	39.60	2,293.13	2,332.73
Town of Mount Forest	.....	3,174.29	3,174.29
Town of Palmerston	625.43	885.95	1,511.38

COUNTY	CONSTRUCTION	MAINTENANCE	TOTAL
WELLINGTON (Cont'd):			
Development Roads:			
County Road No. 65 (part)	$ 40,002.50	$	$ 40,002.50
County Road No. 65 (Erin Twp.)	205,218.36	.....	205,218.36
Alma–Parker	800.00	.....	800.00
Rockwood–Brucedale	69,625.67	.....	69,625.67
Highway 6–Victoria Bridge	1,673.95	.....	1,673.95
Lands and Buildings	66,536.72	2,136.91	68,673.63
	$1,668,481.01	$ 550,508.67	$2,218,989.68
WENTWORTH:			
Highway 2	$ 25,704.67	$ 62,663.83	$ 88,368.50
" 5	5,306.50	69,274.00	74,580.50
" 6	827,829.29	70,973.15	898,802.44
" 8	62,487.51	80,510.73	142,998.24
" 20	5,637.25	47,022.12	52,659.37
" 52	57,987.34	44,712.33	102,699.67
" 53	3,106.65	23,948.97	27,055.62
" 56	3,589.96	23,989.95	27,579.91
" 97	10,447.88	23,469.71	33,917.59
" 99	7,025.42	36,273.71	43,299.13
" 102	151.17	160.06	311.23
" 403	2,312,829.49	14,581.20	2,327,410.69
Queen Elizabeth Way	98,470.51	268,544.78	367,015.29
Miscellaneous Surveys	7,579.72	.....	7,579.72
Connecting Links:			
Town of Dundas	465,569.34	.....	465,569.34
City of Hamilton	42,573.82	.....	42,573.82
Lands and Buildings	75,803.97	1,315.11	77,119.08
	$4,012,100.49	$ 767,439.65	$4,779,540.14
YORK:			
Highway 2	$ 235.11	$ 4,043.27	$ 4,278.38
" 2A	190.85	1,746.24	1,937.09
" 5	18.36	4,625.23	4,643.59
" 7	1,427,305.80	140,358.86	1,567,664.66
" 9	157.31	11,845.20	12,002.51
" 11	38,256.60	163,828.37	202,084.97
" 27	314,613.01	201,351.42	515,964.43
" 47	1,835.44	35,830.24	37,665.68
" 48	288,266.45	228,119.67	516,386.12
" 50	13,744.88	15,723.68	29,468.56
" 117	.....	6,882.98	6,882.98
" 400	815,205.61	204,539.22	1,019,744.83
" 401 (M.-C.F.)	19,192,414.49	489,994.78	19,682,359.27
" 403	1,357.92	.....	1,357.92
" 404	64,772.80	.....	64,772.80
" 407	260,091.65	.....	260,091.65
Queen Elizabeth Way	8,235.38	107,364.52	115,599.90
Wilson Avenue (Toronto)	81,420.95	.....	81,420.95
Bloor Street (Toronto)	1,825.00	.....	1,825.00
Yonge Street (Toronto)	139,433.77	.....	139,433.77
Toronto International Airport Road	Cr. 11,759.11	.....	Cr. 11,759.11
Miscellaneous Surveys	3,478.58	.....	3,478.58
Storm Sewers:			
Municipality of Metropolitan Toronto	293,640.38	.....	293,640.38
Connecting Links:			
Town of Aurora	.....	400.14	400.14
Town of Markham	.....	179.55	179.55
Town of Richmond Hill	28,032.15	3,572.71	31,604.86
Village of Stouffville	.....	3,374.25	3,374.25
Development Road:			
County Road No. 31 (part)	148,651.67	.....	148,651.67
Lands and Buildings	113,111.46	28,483.84	141,595.30
	$23,224,536.51	$ 1,652,214.17	$24,876,750.68

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
ALGOMA:			
Highway 17	$ 855,090.36	$ 976,380.36	$1,831,470.72
" 68	.....	44,706.17	44,706.17
" 101	979,754.37	26,788.23	1,006,542.60
" 108	32,420.05	68,257.45	100,677.50
" 129	44,682.09	227,234.42	271,916.51
Ferries	.....	106,778.61	106,778.61
Sec. Hwy. 538	5,048.22	6,624.85	11,673.07
" " 546	21,164.01	66,144.81	87,308.82
" " 547	151,898.42	5,940.14	157,838.56
" " 548	85,260.83	84,347.89	169,608.72
" " 550	543,940.61	61,122.92	605,063.53
" " 552	1,539.87	49,165.86	50,705.73
" " 553	3,241.75	53,931.62	57,173.37
" " 554	966.35	14,489.19	15,455.54
" " 555	36,929.53	17,670.76	54,600.29
" " 556	11,604.37	70,035.97	81,640.34
" " 557	20,652.67	41,696.72	62,349.39
" " 561	6,300.31	43,033.23	49,333.54
" " 563	.....	10,728.04	10,728.04
" " 565	747.31	9,641.66	10,388.97
" " 631	76,738.14	78,412.22	155,150.36
" " 638	5,361.93	56,809.43	62,171.36
" " 639	69,057.64	7,728.04	76,785.68
" " 651	14,367.60	.....	14,367.60
Access Roads:			
Panel Mine Road	.....	5,061.76	5,061.76
Denison Mine Road	.....	5,892.11	5,892.11
Stanrock Mine Road	.....	17,799.45	17,799.45
Milliken Mine Road	.....	6,572.43	6,572.43
Algoma–Nordic Mine Road	.....	4,638.79	4,638.79
Miscellaneous Surveys	4,748.73	.....	4,748.73
Sidewalk:			
City of Sault Ste. Marie	29,728.00	.....	29,728.00
Connecting Links:			
Town of Blind River	.....	163.35	163.35
City of Sault Ste. Marie	172,277.51	.....	172,277.51
Town of Thessalon	161,825.81	688.65	162,514.46
Unincorporated Townships:			
Aberdeen	9,008.74	1,974.48	10,983.22
Aweres	.....	4,228.72	4,228.72
Bridgeland	4,936.38	.....	4,936.38
Cobden	1,415.30	1,027.37	2,442.67
Deroche	3,398.78	249.61	3,648.39
Fenwick	.....	4,106.97	4,106.97
Fisher	.....	16.41	16.41
Galbraith	.....	1,720.44	1,720.44
Gaudette	8,581.24	149.57	8,730.81
Grassett	461.51	28.00	489.51
Havilland	.....	4,790.65	4,790.65
Hawk Junction	.....	1,702.73	1,702.73
Herrick	.....	7.41	7.41
Hodgins	.....	43.75	43.75
Kars	.....	769.67	769.67
Kehoe	.....	8.40	8.40
Kirkwood	.....	605.06	605.06
Lewis	.....	100.00	100.00
Montgomery	.....	238.57	238.57
McMahon	225.22	.....	225.22
Parkinson	.....	14.00	14.00
Patton	12,041.62	550.07	12,591.69
Plummer	.....	3,307.67	3,307.67
Ranger Lake Area	.....	5,344.36	5,344.36
Rose	.....	963.25	963.25
Shedden	.....	7,387.13	7,387.13
Shields	.....	149.57	149.57
Striker	.....	1,718.36	1,718.36

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
ALGOMA (Cont'd):			
Township 27 Rge. 24	$	$ 37.34	$ 37.34
Township 28 Rge. 24	.....	5,716.38	5,716.38
Township 130	.....	25.00	25.00
Township 131	.....	25.00	25.00
Township 188	.....	99.00	99.00
Vankoughnet	5,632.91	1,143.24	6,776.15
Victoria	.....	8,801.72	8,801.72
Wells	.....	730.06	730.06
Development Roads:			
Old Garden River Road	85,044.76	.....	85,044.76
Deanlake Bridge	2,033.83	.....	2,033.83
Hwy. 565–Point Deschenes Pk.	120,776.36	.....	120,776.36
Lands and Buildings	94,955.32	8,528.53	103,483.85
	$3,683,858.45	$2,234,793.62	$5,918,652.07
COCHRANE:			
Highway 11	$1,243,274.99	$ 621,198.07	$1,864,473.06
" 67	34,522.48	37,058.20	71,580.68
" 101	36,726.08	160,536.96	197,263.04
Ferries	.....	45,212.98	45,212.98
Sec. Hwy. 544	3,245.32	.....	3,245.32
" " 572	7,144.13	12,995.23	20,139.36
" " 574	74,790.90	82,962.60	157,753.50
" " 575	.....	2,031.29	2,031.29
" " 576	83,734.36	38,065.68	121,800.04
" " 577	37,809.45	34,640.43	72,449.88
" " 578	68,314.59	26,191.00	94,505.59
" " 579	68,942.02	53,597.98	122,540.00
" " 581	14,519.05	4,120.01	18,639.06
" " 583	40,327.51	93,501.42	133,828.93
" " 610	57,277.77	20,953.19	78,230.96
" " 626	5,089.50	22,070.86	27,160.36
" " 629	.....	14,063.03	14,063.03
" " 631	1,872.02	7,988.16	9,860.18
" " 636	2,957.56	17,695.26	20,652.82
" " 652	268,733.15	.....	268,733.15
" " 655	67,585.64	.....	67,585.64
Tertiary Road 807	123,673.75	.....	123,673.75
Miscellaneous Surveys	37,106.54	.....	37,106.54
Connecting Links:			
Town of Cochrane	.....	5,723.90	5,723.90
Town of Hearst	.....	5,161.93	5,161.93
Town of Iroquois Falls	39,708.36	.....	39,708.36
Town of Matheson	.....	330.12	330.12
Town of Timmins	.....	3,336.39	3,336.39
Township of Tisdale	9,797.82	.....	9,797.82
Unincorporated Townships:			
Deloro		4,934.30	4,934.30
Evelyn		2,010.10	2,010.10
German		1,740.94	1,740.94
Macklem		1,039.21	1,039.21
Matheson		1,743.51	1,743.51
Munro		182.27	182.27
McCann		355.81	355.81
Ogden		1,630.96	1,630.96
Robb		201.49	201.49
Shaw		523.60	523.60
Sheraton		1,039.22	1,039.22
Thomas		1,039.21	1,039.21
Warden		161.28	161.28
Barker		78.96	78.96
Bicknell		54.65	54.65
Boyce		99.99	99.99
Brower		2,884.20	2,884.20
Calder	8,066.97	4,220.36	12,287.33

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
COCHRANE (Cont'd):			
Casgrain	$ 3,566.80	$ 2,005.25	$ 5,572.05
Clute	9,946.36	8,710.47	18,656 83
Clavet	.....	72 72	72 72
Colquhoun	.....	100.50	100.50
Devitt	.....	3,917.57	3,917.57
Eilber	.....	3,507.29	3,507.29
Fournier	986.42	5,631.55	6,617.97
Fox	7,910.48	2,122.12	10,032.60
Hanlan	4,020.08	5,171.38	9,191.46
Idington	.....	2,334.38	2,334.38
Kendal	11,628.20	7,217.76	18,845.96
Kennedy	.....	2,338.62	2,338.62
Lamarche	21,265.35	3,978.72	25,244.07
Lowther	1,521.38	2,590.66	4,112.04
McCrea	.....	2,253.94	2,253.94
Newmarket	1,370.04	1,996.24	3,366.28
O'Brien	.....	221.99	221.99
Owens	809.16	7,395.56	8,204.72
Pyne	.....	1,920.04	1,920.04
Way	.....	9,376.86	9,376.86
Williamson	620.06	2,479.14	3,099.20
Development Roads:			
Victoria Road	Cr. 2,426.09	.....	Cr. 2,426.09
Back Road	451,068.21	.....	451,068.21
Aunor–Delnite Road (part)	17,011.21	.....	17,011.21
Lands and Buildings	89,067.93	8,333.87	97,401.80
Weigh Scales	3,038.84	.....	3,038.84
	$2,956,624.39	$1,417,051.38	$4,373,675.77
HALIBURTON:			
Highway 28	Cr.$ 1,555.40	$ 15,630.42	$ 14,075.02
" 35	39,763.49	98,006.80	137,770.29
" 60	2,053.25	10,978.00	13,031.25
" 121	76,616.75	69,626.07	146,242.82
Sec. Hwy. 503	6,600.33	29,216.71	35,817.04
" " 507	746.91	10,886.62	11,633.53
" " 519	12,401.18	63,992.23	76,393.41
" " 530	185,186.76	28,182.80	213,369.56
" " 648	.....	24,273.26	24,273.26
Miscellaneous Surveys	82.06	.....	82.06
Sidewalk:			
At Moore's Falls	7,905.83	.....	7,905.83
Development Roads:			
Gooderham–Haliburton	173,774.63	.....	173,774.63
Minden Bay Road	110,130.60	.....	110,130.60
Carnavon–Quinn's Corners	6,397.67	.....	6,397.67
Lands and Buildings	13,326.96	1,698.19	15,025.15
	$ 633,431.02	$ 352,491.10	$ 985,922.12
KENORA:			
Highway 17	$2,534,049.91	$ 348,912.99	$2,882,962.90
" 71	41,940.48	88,668.83	130,609.31
" 72	58,231.81	86,378.80	144,610.61
" 105	699,496.62	164,113.95	863,610.57
" 116	4,682.81	22,848.04	27,530.85
" 119	.....	12,704.14	12,704.14
" 125	2,805.51	10,148.92	12,954.43
" 128	9,257.63	26,332.90	35,590.53
Sec. Hwy. 594	43,837.73	16,133.82	59,971.55
" " 596	8,832.80	68,756.61	77,589.41
" " 598	.....	9,437.97	9,437.97
" " 599	72,940.58	45,377.33	118,317.91
" " 601	78,897.58	19,093.15	97,990.73
" " 603	.....	2,812.74	2,812.74

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
KENORA (Cont'd):			
" " 604	$ 9,556.67	$ 20,700.36	$ 30,257.03
" " 605	31,909.37	8,662.18	40,571.55
" " 609	3,096.26	6,759.53	9,855 79
" " 618	149.16	9,698.84	9,848.00
" " 641	107.33	30,945.97	31,053.30
" " 642	7,144.81	10,253.79	17,398.60
" " 646	181.58	9,299.88	9,481.46
" " 647	11,040.14	5,002.08	16,042.22
" " 659	.....	10,018.97	10,018.97
Tertiary Road 804	.....	4,184.43	4,184.43
Access Road:			
Savant Lake South–Sturgeon River	Cr. 36,006.34	.....	Cr. 36,006.34
Industrial Road:			
Ignace–Valora	19,003.60	10,161.83	29,165.43
Miscellaneous Surveys	4,777.73	.....	4,777.73
Sidewalk:			
Township of Red Lake	1,447.27	.....	1,447.27
Connecting Link:			
Town of Kenora	.....	647.89	647.89
Unincorporated Townships:			
South of Sturgeon Lake U.T.	.....	14.00	14.00
Aubrey East	.....	906.84	906.84
Britton	.....	1,617.75	1,617.75
Colenso	.....	86.68	86.68
Drayton	.....	280.36	280.36
Drayton Reserve	4,398.57	2,289.61	6,688.18
Eagle Lake I.R.	.....	152.41	152.41
Eton	9,730.98	9,061.93	18,792.91
Forgie and Boys	.....	958.87	958.87
Gidley	.....	9.23	9.23
Gundy	.....	512.89	512.89
Indian Reserve 32A	.....	1,262.66	1,262.66
Indian Reserve 39A	.....	7,966.90	7,966.90
Indian Reserve 38B	.....	69.87	69.87
Kirkup	.....	458.20	458.20
MacNicol	.....	37.63	37.63
Melgund	.....	899.07	899.07
Mutrie	.....	1,576.75	1,576.75
North of Buller	.....	1,245.80	1,245.80
North of Smellie	.....	539.23	539.23
North of Urnbach	.....	463.21	463.21
Pellatt	5,753.37	5,012.03	10,765.40
Redditt	.....	790.14	790.14
Redvers	.....	1,039.74	1,039.74
Rowell	.....	503.60	503.60
Rugby	.....	515.71	515.71
Shoal Lake I.R.	.....	250.00	250.00
Smellie	.....	539.21	539.21
South of Pellatt	.....	1,842.42	1,842.42
South of Worth	.....	840.93	840.93
South of Southworth U.T.	.....	72.13	72.13
Van Horne	.....	1,100.33	1,100.33
Vermilion Add'l	.....	238.39	238.39
Wabigoon	5,507.05	1,039.73	6,546.78
Wabigoon Lake I.R.	.....	217.37	217.37
Wainwright	.....	2,853.16	2,853.16
West of Redditt	.....	820.05	820.05
Zealand	.....	1,901.37	1,901.37
Lands and Buildings	76,123.66	11,397.83	87,521.49
Weigh Scales	2,238.16	.....	2,238.16
	$3,711,132.83	$1,109,439.97	$4,820,572.80
MANITOULIN:			
Highway 68	$ 645,788.14	$ 211,163.02	$ 856,951.16
Sec. Hwy. 540	91,496.85	219,971.91	311,468.76

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
MANITOULIN (Cont'd):			
Sec. Hwy. 540A	$	$ 4,145.75	$ 4,145.75
" " 542	95,851.48	109,457.99	205,309.47
" " 542A	.....	1,565.18	1,565.18
" " 551	10,715.45	35,327.59	46,043.04
" " 637	127,618.36	55,110.34	182,728.70
Miscellaneous Surveys	10,610.63	.....	10,610.63
Connecting Link:			
Town of Little Current	4,077.47	.....	4,077.47
Unincorporated Townships:			
Campbell	3,529.69	7,842.97	11,372.66
Dawson	.....	1,464.04	1,464.04
Mills	506.33	3,421.50	3,927.83
Robinson	.....	7,689.74	7,689.74
Lands and Buildings	6,415.58	49.75	6,465.33
	$ 996,609.98	$ 657,209.78	$1,653,819.76
MUSKOKA:			
Highway 11	$ 143,702.37	$ 154,261.83	$ 297,964.20
" 35	411,969.88	44,718.12	456,688.00
" 60	959.73	4,343.35	5,303.08
" 69	233,372.88	65,661.45	299,034.33
" 103	13,519.19	55,710.64	69,229.83
" 118	92,313.67	70,482.16	162,795.83
" 400	30.00	.....	30.00
Sec. Hwy. 501	9,848.89	19,580.22	29,429.11
" " 514	322.20	28,579.35	28,901.55
" " 516	14,246.55	26,433.67	40,680.22
" " 525	423.14	2,693.91	3,117.05
" " 527	3,212.02	24,754.19	27,966.21
" " 532	256,528.38	63,731.91	320,260.29
" " 592	.....	402.74	402.74
" " 612	34.45	18,884.78	18,919.23
" " 632	29,074.11	25,062.75	54,136.86
" " 660	288.35	.....	288.35
Miscellaneous Surveys	7,369.78	.....	7,369.78
Connecting Links:			
Town of Bracebridge	.....	2,211.05	2,211.05
Town of Gravenhurst	.....	3,424.64	3,424.64
Town of Huntsville	.....	2,932.20	2,932.20
Village of Port Carling	.....	2,675.76	2,675.76
Unincorporated Townships:			
Baxter	.....	11,787.67	11,787.67
Gibson I.R.	14,967.25	.....	14,967.25
Gibson	10,243.94	4,334.06	14,578.00
Sinclair	.....	2,947.61	2,947.61
Development Roads:			
Huntsville–Rosseau (part)	51,055.58	.....	51,055.58
Port Cunnington Road	1,218.49	.....	1,218.49
Huntsville–Rosseau (part)	145,221.32	.....	145,221.32
Twelve Mile Bay Road	335,642.71	.....	335,642.71
Hwy. 527–Stephenson Boundary	115,760.60	.....	115,760.60
Black Bridge–Mathiasville	162,447.49	.....	162,447.49
Coopers Falls–Housey Rapids	111,061.30	.....	111,061.30
Rotary Beach Road	36,771.73	.....	36,771.73
Lands and Buildings	30,351.32	12,924.79	43,276.11
Weigh Scales	10,022.00	.....	10,022.00
	$2,241,979.32	$ 648,538.85	$2,890,518.17
NIPISSING:			
Highway 11	$ 297,115.06	$ 252,037.73	$ 549,152.79
" 17	1,234,787.79	311,859.90	1,546,647.69
" 60	336,713.65	135,895.83	472,609.48
" 63	45,195.21	104,373.20	149,568.41
" 64	153,838.20	100,198.68	254,036.88

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
NIPISSING (Cont'd):			
Highway 94	$ 2,508.66	$ 16,848.18	$ 19,356.84
" 123	4,860.53	16,330.64	21,191.17
" 127	6,551.55	25,195.71	31,747.26
Sec. Hwy. 514	.....	2,151.81	2,151.81
" " 523	20,986.60	36,463.78	57,450.38
" " 528	1,654.50	3,427.37	5,081.87
" " 531	5,336.14	6,311.07	11,647.21
" " 533	176,126.60	58,441.51	234,568.11
" " 539	107,857.86	51,459.31	159,317.17
" " 539A	387.13	566.27	953.40
" " 630	79,729.35	38,768.47	118,497.82
Tertiary Road 805	36,171.04	15,222.40	51,393.44
Miscellaneous Surveys	949.28	.....	949.28
Connecting Links:			
City of North Bay	21,180.92	.....	21,180.92
Town of Sturgeon Falls	1,095.51	601.96	1,697.47
Unincorporated Townships:			
Dickens	.....	1,216.80	1,216.80
Murchison	117.17	1,873.03	1,990.20
Sabine	1,547.05	2,378.21	3,925.26
Finlayson	.....	2,590.19	2,590.19
Badgerow	16,203.13	5,312.89	21,516.02
Bastedo	.....	319.72	319.72
Boulter	.....	135.15	135.15
Crerar	.....	496.15	496.15
Falconer	7,925.53	2,512.63	10,438.16
Gibbons	11,355.00	1,523.07	12,878.07
Gladman	.....	7.00	7.00
Grant	3,780.85	2,725.21	6,506.06
Hugel	1,135.91	3,101.66	4,237.57
Kirkpatrick	19,832.52	4,894.95	24,727.47
Latchford	.....	310.40	310.40
Law	.....	14.52	14.52
Loudon	.....	726.28	726.28
MacPherson	1,738.45	4,096.81	5,835.26
Phelps	4,781.06	5,420.55	10,201.61
Poitras	.....	207.38	207.38
Wyse	.....	146.92	146.92
Best	.....	19.20	19.20
Strathy	.....	179.37	179.37
Development Roads:			
Calvin and Papineau Townline	.....	16,654.61	16,654.61
Concession VI/VII	91,227.77	.....	91,227.77
Caredette Corners	6,994.92	.....	6,994.92
Concession XII/XIII–Lot 6	4,931.42	.....	4,931.42
Trout Lake Road	6,101.23	.....	6,101.23
Powassan–Rutherglen Road	4,525.00	.....	4,525.00
Lands and Buildings	64,429.67	9,939.38	74,369 05
	$2,779,672.26	$1,242,955.90	$4,022,628.16
PARRY SOUND:			
Highway 11	$ 10,735.04	$ 144,793.97	$ 155,529.01
" 69	17,620.87	198,704.89	216,325.76
" 124	286,168.57	126,391.94	412,560.51
Sec. Hwy. 510	.....	5,398.78	5,398.78
" " 518	72,379.98	149,498.30	221,878.28
" " 520	118,497.08	106,164.00	224,661.08
" " 522	165,388.51	60,645.82	226,034.33
" " 524	.....	6,897.39	6,897.39
" " 526	19.54	11,701.76	11,721.30
" " 529	18,022.51	51,891.63	69,914.14
" " 529A	.....	8,584.12	8,584.12
" " 532	53,633.27	43,007.99	96,641.26
" " 534	95,251.67	68,124.34	163,376.01
" " 559	.....	40,442.91	40,442.91

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
PARRY SOUND (Cont'd):			
Sec. Hwy. 592	$	$ 15,990.76	$ 15,990.76
" " 612	13.37	10,486.58	10,499.95
" " 632	4,519.90	17,260.82	21,780.72
" " 644	8,445.02	2,180.58	10,625.60
" " 645	643.21	9,632.19	10,275.40
" " 654	55,466.01	25,081.19	80,547.20
Miscellaneous Surveys	114.45	.....	114.45
Sidewalk:			
Township of McMurrich	464.38	.....	464.38
Connecting Links:			
Town of Parry Sound	.....	5,613.53	5,613.53
Village of Rosseau	.....	440.51	440.51
Unincorporated Townships:			
Bethune	.....	4,995.28	4,995.28
Blair	62,713.14	1,195.53	63,908.67
Burpee	2,505.19	1,112.93	3,618.12
Conger	2,775.94	2,409.65	5,185.59
Croft	.....	5,077.04	5,077.04
Ferguson	5,287.01	573.98	5,860.99
Ferrie	2,097.93	508.95	2,606.88
Gurd	4,529.93	11,689.18	16,219.11
Hardy	7,962.68	5,187.73	13,150.41
Harrison	490.84	825.34	1,316.18
Henvey	4,114.25	2,024.46	6,138.71
Laurier	5,633.73	8,087.38	13,721.11
Lout	6,855.40	6,561.99	13,417.39
McConkey	62,713.14	3,423.62	66,136.76
McKenzie	2,505.20	1,112.94	3,618.14
Mills	7,962.69	5,187.73	13,150.42
Monteith	3,231.32	3,465.38	6,696.70
Mowat	.....	1,195.52	1,195.52
Patterson	5,740.87	6,175 98	11,916.85
Pringle	6,141.92	7,265.62	13,407.54
Proudfoot	.....	2,577.28	2,577.28
Shawnaga	.....	349.95	349.95
Spence	12,241.30	5,506.41	17,747.71
Wallbridge	4,114.25	2,645.39	6,759.64
Wilson	.....	3,423.62	3,423.62
Development Roads:			
Dillon Cove Road	2,408.84	6,498.87	8,907.71
Concession XII	2,354.81	.....	2,354.81
Humphry Boundary Northerly	2,520.56	.....	2,520.56
Killbear Park Road	225,902.94	3,032.91	228,935.85
Burk's Falls–Con. VII	24,854.52	.....	24,854.52
Machar Lake Bridge	81,619.02	.....	81,619.02
Concession XVI/XVII	30,911.35	.....	30,911.35
Road Between Con. X/XI (part)	481.76	.....	481.76
Lands and Buildings	52,014.00	3,228.55	55,242.55
	$1,540,067.91	$1,214,273.21	$2,754,341.12
RAINY RIVER:			
Highway 11	$3,301,949.49	$ 153,260.96	$3,455,210.45
" 71	14,230.31	41,858.00	56,088.31
Sec. Hwy. 600	62,042.63	80,280.51	142,323.14
" " 602	110,307.37	37,484.93	147,792.30
" " 611	.....	11,845.67	11,845.67
" " 613	18,220.17	31,878.77	50,098.94
" " 615	917.92	16,517.16	17,435.08
" " 617	1,161.16	20,120.23	21,281.39
" " 619	19,815.52	27,927.63	47,743.15
" " 621	4,158.57	30,862.17	35,020.74
" " 622	203.10	6,837.47	7,040.57
" " 623	11,402.02	5,751.03	17,153.05
" " 633	.....	1,686.76	1,686.76
Miscellaneous Surveys	19.35	.....	19.35

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
RAINY RIVER (Cont'd):			
Connecting Links:			
Town of Fort Frances	$ 23,587.47	$ 5,838.66	$ 29,426.13
Town of Rainy River	.....	46.71	46.71
Unincorporated Townships:			
South of Tanner	.....	25.00	25.00
Dance	.....	1,521.79	1,521.79
Dewart	.....	2,311.90	2,311.90
Indian Reserve 16A	.....	423.38	423.38
Indian Reserve 17A	.....	827.39	827.39
Indian Reserve 18B	.....	736.89	736.89
Indian Reserve 93	.....	486.68	486.68
Miscampbell	.....	3,387.81	3,387.81
Nelles	.....	3,399.33	3,399.33
North of Fleming	.....	33.25	33.25
Sifton	.....	2,326.58	2,326.58
Spohn	.....	1,047.78	1,047.78
Sutherland	.....	4,268.65	4,268.65
Development Roads:			
Morley/Sheston Townline	2,339.57	.....	2,339.57
Dilke/Nelles Boundary Road	45,234.77	.....	45,234.77
Lands and Buildings	21,259.87	3,557.48	24,817.35
	$3,636,849.29	$ 496,550.57	$4,133,399.86
SUDBURY:			
Highway 17	$ 769,699.37	$ 350,051.32	$1,119,750.69
" 64	329,979.80	56,636.16	386,615.96
" 68	150,585.52	57,049.42	207,634.94
" 69	60,904.75	244,836.57	305,741.32
" 101	769,638.12	128,775.25	898,413.37
" 129	43,358.75	101,609.50	144,968.25
Sec. Hwy. 528	9,285.39	23,648.33	32,933.72
" " 528A	1,485.80	9,301.28	10,787.08
" " 535	125,927.54	65,019.08	190,946.62
" " 536	.....	7,895.66	7,895.66
" " 537	87,626.65	47,985.95	135,612.60
" " 539	27.24	9,864.93	9,892.17
" " 541	27,437.59	65,454.36	92,891.95
" " 541A	505.11	3,859.15	4,364.26
" " 543	19,063.63	14,989.64	34,053.27
" " 544	951,750.15	135,515.35	1,087,265.50
" " 544A	.....	1,603.64	1,603.64
" " 545	Cr. 4,521.12	44,436.77	39,915.65
" " 549	76,116.81	34,644.85	110,761.66
" " 553	1,578.75	4,379.87	5,958.62
" " 560	16,071.18	97,930.86	114,002.04
" " 560A	.....	6,644.47	6,644.47
" " 606	49.00	3,724.55	3,773.55
" " 607	107,209.35	24,825.27	132,034.62
" " 607A	.....	903.88	903.88
" " 616	.....	1,135.52	1,135.52
" " 634	203,463.88	28,854.65	232,318.53
" " 637	1,069.30	45,544.11	46,613.41
" " 651	376.09	.....	376.09
Tertiary Road 805	11,166.40	9,558.26	20,724.66
" " 806	64.25	1,202.46	1,266.71
Miscellaneous Surveys	23,517.92	.....	23,517.92
Sidewalk:			
Police Village of Noelville	326.67		326.67
Connecting Links:			
Town of Capreol	.....	656 51	656.51
Town of Espanola	.....	1,380.78	1,380.78
Unincorporated Townships:			
Allen	.....	200.00	200.00
Bigwood	.....	1,804.38	1,804.38

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
SUDBURY (Cont'd):			
Davis	$	$ 46.42	$ 46.42
Delamere	6,221.54	4,086.51	10,308.05
Hoskin	.....	1,751.37	1,751.37
Haddo	.....	516.38	516.38
Henry	.....	355 99	355.99
Janes	.....	108.32	108.32
Scollard	.....	1,144.19	1,144.19
Foleyet	.....	2,226.23	2,226.23
Noble	.....	827.38	827.38
Togo	.....	827.40	827.40
Awrey	152.49	468.96	621.45
Broder	5,176.49	8,031.97	13,208.46
Burwash	333.47	2,725.63	3,059.10
Cartier	.....	173.88	173.88
Cascaden	.....	445.29	445.29
Cleland	277.36	3,900.31	4,177.67
Curtin	.....	2,292.85	2,292.85
Dieppe	.....	478.97	478.97
Dill	.....	4,083.75	4,083.75
Dryden	2,773.88	3,080.04	5,853.92
Eden	.....	730.55	730.55
Fairbank	.....	113.80	113.80
Foster	4,902.33	810.90	5,713.23
Hawley	.....	72.75	72.75
Hendrie	.....	110.30	110.30
Hess	.....	593.04	593.04
Lorne	.....	5,827.77	5,827.77
Loughrin	.....	1,125.98	1,125.98
Louise	.....	2,618.86	2,618.86
Maclennan	3,860.88	3,399.22	7,260.10
Merritt	3,636.05	2,220.91	5,856.96
Moncrief	.....	253.27	253.27
Mongowin	.....	533.14	533.14
Morgan	12,873.11	101.45	12,974.56
McKinnon	.....	1,015.82	1,015.82
Norman	.....	930.94	930.94
Rathbun	6,850.74	1,558.56	8,409.30
Scadding	4,451.69	2,078.09	6,529.78
Secord	7,731.89	3,521.01	11,252.90
Servos	.....	165.41	165.41
Street	953.93	1,558.57	2,512.50
Tilton	.....	245.87	245.87
Trill	.....	153.80	153.80
Truman	.....	347.53	347.53
Shakespeare	7,586.60	1,672.83	9,259.43
Development Roads:			
Spanish River Bridge	113.48	.....	113.48
River Road–Salter Township	55,497.82	.....	55,497.82
Webbwood Bridge	2,293.52	.....	2,293.52
Ratter/Hagar Boundary Westerly	96,035.71	.....	96,035.71
Birch Creek Bridge	265.79	.....	265.79
Lands and Buildings	70,048.01	6,006.10	76,054.11
	$4,075,800.67	$1,707,261.09	$5,783,061.76
THUNDER BAY:			
Highway 11	$ 498,402.23	$ 588,564.62	$1,086,966.85
" 11A	3,484.05	42,108.18	45,592.23
" 17	582,325.47	447,339.75	1,029,665.22
" 61	21,818.88	49,539 16	71,358.04
" 130	105,526.26	29,832.26	135,358.52
Sec. Hwy. 580	168.45	3,203.99	3,372.44
" " 582	.....	2,757.53	2,757.53
" " 584	2,653.99	67,232.93	69,886.92
" " 584A	.....	82.58	82.58

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
THUNDER BAY (Cont'd):			
Sec Hwy 585	$ 18,372.08	$ 28,271.56	$ 46,643.64
" " 586	.....	2,611.80	2,611.80
" " 587	2,703.13	53,280.00	55,983.13
" " 588	74,671.91	71,327.05	145,998.96
" " 589	1,013.60	36,228.37	37,241.97
" " 590	5,937.14	47,104.85	53,041.99
" " 591	19.91	8,279.55	8,299.46
" " 593	78,500.13	27,518.32	106,018.45
" " 595	32,729.84	47,683.12	80,412.96
" " 597	21,101.96	10,283.05	31,385.01
" " 599	35,492.51	61,497.32	96,989.83
" " 608	326.05	23,217.17	23,543.22
" " 614	32,684.53	89,774.57	122,459.10
" " 625	26,467.75	30,556.35	57,024.10
" " 627	583.10	9,106.55	9,689.65
" " 628	28,461.95	7,097.04	35,558.99
" " 643	47.86	9,622.48	9,670.34
Tertiary Road 800	.....	9,627.39	9,627.39
" " 801	2,956.36	4,816.13	7,772.49
" " 802	36,587.09	4,299.97	40,887.06
Port Arthur/Fort William Ring Road	171,795.45	.....	171,795.45
Industrial Road:			
Caramat–Manitouwadge	.....	29,372.65	29,372.65
Miscellaneous Surveys	587.11	.....	587.11
Connecting Links:			
City of Fort William	49,017.14	.....	49,017.14
Town of Geraldton	.....	3,572.18	3,572.18
Unincorporated Townships:			
Armstrong	23.21	3,114.00	3,137.21
Blackwell	.....	8.48	8.48
Boucher (U.T., South-West of)	.....	28.00	28.00
Conacher	.....	21.85	21.85
Dawson Road Lots	2,437.97	6,195.04	8,633.01
Devon	2,369.87	3,211.82	5,581.69
Forbes	3,372.30	7,111.85	10,484.15
East of Armstrong U.T.	250.21	.....	250.21
Fowler	5,944.68	5,103.74	11,048.42
Goldie	.....	542.57	542.57
Golding	.....	14.97	14.97
Gorham	10,129.87	17,214.29	27,344.16
Hardwick	2,899.81	1,448.02	4,347.83
Jacques	1,952.56	6,686.29	8,638.85
Joynt–Inwood	.....	1,284.08	1,284.08
Kilkenny	.....	925.43	925.43
Leduc U.	.....	8.75	8.75
Lybster	3,699.83	7,866.50	11,566.33
Lyons	.....	1,971.45	1,971.45
Marks	1,960.45	2,744.07	4,704.52
McTavish West UT	.....	263.87	263.87
Pearson	1,240.89	6,850.90	8,091.79
Rossport	.....	91.48	91.48
Scoble	2,459.02	6,463.86	8,922.88
South of Ledger U.T.	219.14	.....	219.14
Sibley	1,972.79	2,868.71	4,841.50
Stirling	.....	1,764.26	1,764.26
Strange	826.35	3,605.64	4,431.99
Township 92 U.	.....	172.73	172.73
Upsala	3,761.11	4,823.56	8,584.67
Ware	11,141.67	16,753.84	27,895.51
Development Roads:			
Golf Links Road Extension	19,143 91	.....	19,143.91
Road from Hwy. 588 Northerly	30,463.09	.....	30,463.09
Lands and Buildings	86,006.03	9,161.09	95,167.12
Weigh Scales	2,601.60	.....	2,601.60
	$2,029,312.29	$1,964,129.61	$3,993,441.90

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
TIMISKAMING:			
Highway 11	$ 70,150.24	$ 281,426.42	$ 351,576.66
" 65	323,584.20	172,872.67	496,456.87
" 66	13,026.88	120,287.67	133,314.55
" 101	4,545.10	34,618.79	39,163.89
" 112	772.98	34,560.11	35,333.09
Sec. Hwy. 544	27,157.65	.....	27,157.65
" " 558	16,256.26	31,989.69	48,245.95
" " 560	51,652.46	136,432.00	188,084.46
" " 562	26.13	27,004.29	27,030.42
" " 564	67.55	13,293.54	13,361.09
" " 566	13,303.98	26,105.92	39,409.90
" " 567	18,869.52	45,152.46	64,021.98
" " 568	21.17	1,267.98	1,289.15
" " 569	56,693.58	56,323.13	113,016.71
" " 570	27,708.72	4,829.64	32,538.36
" " 571	245.10	11,622.18	11,867.28
" " 573	12,637.06	37,020.67	49,657.73
" " 624	46,982.61	50,029.10	97,011.71
" " 640	44,303.28	3,966.14	48,269.42
" " 650	213,780.38	13,985.97	227,766.35
Access Road:			
Adams Mine–Dane	Cr. 1,596.59	.....	Cr. 1,596.59
Special Agreement:			
Moose Creek Bridge (Casey Twp.)	8,051.69	.....	8,051.69
Miscellaneous Surveys	6,182.85	.....	6,182.85
Connecting Links:			
Town of Cobalt	.....	3,186.57	3,186.57
Town of Haileybury	139,720.18	3,973.82	143,694.00
Town of New Liskeard	.....	8,221.12	8,221.12
Township of Teck	.....	3,928.49	3,928.49
Unincorporated Townships:			
Barber	.....	44.03	44.03
Bayly	.....	880.80	880.80
Beauchamp	1,463.34	4,962.96	6,426.30
Benoit	.....	799.92	799.92
Blair	.....	694.61	694.61
Cairo	.....	348.00	348.00
Cane	.....	3,842.44	3,842.44
Catherine	.....	344.32	344.32
Charters	.....	223.82	223.82
Corkhill	.....	223.82	223.82
Eby	.....	844.60	844.60
Firstbrook	.....	138.65	138.65
Gillies	.....	18.37	18.37
Grenfell	.....	371.47	371.47
Haultain	.....	324.08	324.08
Henwood	.....	4,858.47	4,858.47
Hillary	.....	43.19	43.19
Ingram	2,823.66	2,755.73	5,579.39
Keefer	.....	1,145.30	1,145.30
Lawson	.....	223.82	223.82
Lebel	.....	2,410.92	2,410.92
Leith	.....	223.82	223.82
Maisonville	.....	803.97	803.97
Marquis	.....	1,986.87	1,986.87
Marter	.....	2,899.72	2,899.72
Milner	.....	135.50	135.50
McEvoy	.....	355.81	355.81
Nicol	.....	615.82	615.82
Nordica	.....	355.81	355.81
Ossian	.....	10.00	10.00
Otto	2,554.46	2,585.53	5,139.99
Pacaud	.....	895.95	895.95
Pense	.....	61.74	61.74
Robillard	1,057.40	2,971.35	4,028.75
Savard	1,683.34	3,546.16	5,229.50

DISTRICT	CONSTRUCTION	MAINTENANCE	TOTAL
TIMISKAMING (Cont'd):			
Sharpe	.....	$ 999.53	$ 999.53
South of Lorrain	.....	120.33	120.33
Tudhope	.....	3.50	3.50
Development Roads:			
Dawson Point Road (Harris Twp.)	$ 17,780.02	.....	17,780.02
Concession II/III	36,258.85	.....	36,258.85
Dawson Point Road (part) (Dymond Twp.)	14,153.88	.....	14,153.88
Shannon's Bridge	17,498 49	.....	17,498.49
Lands and Buildings	61,559.50	7,144.88	68,704.38
	$ 1,250,975.92	$ 1,173,313.98	$ 2,424,289.90
COUNTY AND DISTRICT TOTALS	$137,959,988.60	$ 36,537,030.72	$174,497,019.32
Sundry unallocated, District Office, Administrative, Engineering, Building, Inventory Charges, etc.	$ 2,367,072.62	$ 7,682,711.06	$ 10,049,783.68
TOTAL EXPENDITURES	$140,327,061.22	$ 44,219,741.78	$184,546,803.00

APPENDIX No. 3

Department Expenditures by Highways

April 1, 1964 to March 31, 1965

Highway No.	Location	Mileage	Construction	Maintenance	Total
KING'S HIGHWAYS					
2	Quebec Border–Windsor	438.3	$3,734,186.18	$1,475,942.66	$5,210,128.84
2A	Jct. Hwy. 401 (M-C-F)–Jct. Hwy. 2	1.3	190.85	1,746.24	1,937.09
3	Fort Erie–Windsor	244.2	948,709.68	661,774.39	1,610,484.07
3A	Jct. Hwy. 58 (Welland)–Jct. Hwy. 57	9.5	4,050.37	36,077.48	40,127.85
3B	Hwy. 3–Windsor	4.3	6,330.51	23,276.27	29,606.78
3C	Hwy. 3 (Fort Erie)–Ridgeway	7.1	759.24	29,552.36	30,311.60
4	Port Stanley–Hwy. 10 (Flesherton)	131.9	1,205,748.65	385,449.35	1,591,198.00
5	Hwy. 27 (Toronto)–Hwy. 2 (Paris)	54.6	408,927.95	260,307.11	669,235.06
6	Port Dover–Tobermory	200.8	2,458,018.56	578,555.35	3,036,573.91
7	Ottawa–Hwy. 40C (Sarnia)	451.2	3,704,354.48	1,343,877.50	5,048,231.98
7A	Hwy. 115–Hwy. 7, 12 (Manchester)	30.7	1,276.05	88,529.36	89,805.41
8	Niagara Falls–Goderich [7]	101.2	990,182.29	352,042.58	1,342,224.87
8A	Queenston Bridge–Hwy. 8 (St. Davids)	2.7	1,963.69	8,370.30	10,333.99
9	Hwy. 27 (Schomberg)–Hwy. 21 (Kincardine)	97.7	338,693.72	293,025.38	631,719.10
10	Port Credit–Owen Sound	89.3	1,013,026.59	285,173.67	1,298,200.26
11	Toronto–Sec. Hwy. 600 (Rainy River)	1,109.4	6,712,123.75	2,631,966.22	9,344,089.97
11A	Port Arthur–Hwys. 11, 17 (Sistonens Corners)	20.5	3,484.05	42,108.18	45,592.23
12	Whitby–Hwy. 401 (M-C-F)–Hwy. 27 (Midland) [7]	78.9	927,904.97	198,207.58	1,126,112.55
14	Hwy. 33 (Bloomfield)–Hwy. 7 (Marmora)	43.5	142,697.44	126,097.35	268,794.79
15	Hwy. 2 (Barriefield)–Ottawa [7]	73.2	16,667.28	252,988.64	269,655.92
16	Hwy. 2 (Johnstown)–Ottawa	50.1	398,694.18	151,353.14	550,047.32
17	Quebec Border–Manitoba Border [11]	1,283.2	7,337,329.19	3,248,483.18	10,585,812.37
18	Leamington–Windsor	39.7	169,457.11	60,551.79	230,008.90
18A	Hwy. 18 (Kingsville)–Hwy. 18 (Malden Centre)	19.4	8,926.76	20,846.18	29,772.94
19	Port Burwell–Hwy. 86 (Tralee)	69.9	498,821.49	429,391.11	928,212.60
20	Q.E.W.–Hamilton S. Limits	40.5	288,391.00	152,586.54	440,977.54
21	Hwy. 3 (Morpeth)–Owen Sound	181.3	762,101.92	361,525.16	1,123,627.08
22	Hwy. 4 (London)–Hwy. 7	27.7	34,364.76	57,623.08	91,987.84
23	Hwy. 7–Hwy. 9 (Teviotdale)	55.9	269,430.75	144,414.21	413,844.96
24	Port Dover–Collingwood	102.8	691,472.32	289,047.41	980,519.73
24A	Paris–Galt	18.7	216,139.07	37,985.05	254,124.12
25	Hwy. 2 (Burlington)–Ospringe	25.6	553,334.73	90,672.91	644,007.64
26	Barrie–Owen Sound	64.9	185,851.98	196,663.74	382,515.72
27	Q.E.W.–Penetang	82.5	351,580.41	406,659.05	758,239.46
28	Hwy. 2 (Port Hope)–Hwy. 62 (Bancroft)	83.8	34,132.53	211,618.74	245,751.27
29	Hwy. 2 (Brockville)–Hwy. 17 (Arnprior) [15]	52.3	72,296.34	91,594.06	163,890.40
30	Hwy. 2 (Brighton)–Hwy. 7 (Havelock)	29.5	21,391.04	75,066.35	96,457.39
31	Hwy. 2 (Morrisburg)–Ottawa	41.0	42,137.82	172,081.69	214,219.51
32	Hwy. 2 (Gananoque)–Hwy. 15	11.3	.....	58,920.57	58,920.57
33	Kingston–Hwy. 14 (Stirling)	83.7	349,759.02	199,906.63	549,665.65
34	Hwy. 2 (Lancaster)–Hwy. 17 (Hawkesbury)	33.9	14,218.34	81,753.63	95,971.97
35	Hwy. 401 (M.C.F.)–11B (N. of Huntsville	136.0	617,275.55	309,918.62	927,194.17
35A	Hwy. 121–Hwy. 35	2.0	35.43	3,695.66	3,731.09
36	Hwy. 7–Hwy. 28 (Burleigh Falls)	44.7	469,784.83	75,691.87	545,476.70
37	Hwy. 401 (M.C.F.) (Belleville)–Hwy. 7 (Actinolite)	26.4	309,221.58	72,970.49	382,192.07

Highway No.	Location	Mileage	Construction	Maintenance	Total
38	Hwy. 2–Hwy. 7 (Sharbot Lake)	44.1	$ 80,360.47	$ 121,923.01	$ 202,283.48
39	Hwy. 2–Windsor	16.0	337,890.44	31,257.49	369,147.93
40	Chatham–Sarnia	41.7	128,740.84	116,822.41	245,563.25
40A	Hwy. 40 (Corunna)–Hwy. 402	4.9	314,728.93	14,740.62	329,469.55
40C	Vidal St.–Errol Rd. (Sarnia)	.5	6,396.89	525.85	6,922.74
41	Hwy. 33–Pembroke	143.0	836,340.05	267,115.59	1,103,455.64
42	Hwy. 29 (Forthton)–Westport [29]	31.6	680,835.75	83,162.09	763,997.84
43	Hwy. 34 (Alexandria)–Hwy. 7 (Perth)	89.1	158,266.87	205,294.84	363,561.71
44	Hwy. 17 (Carp)–Hwy. 29 (Almonte)	11.5	20,581.50	19,061.29	39,642.79
45	Hwy. 2 (Cobourg)–Hwy. 7 (Norwood)	32.6	7,183.88	76,410.69	83,594.57
46	Hwy. 7–Hwy. 35 (Coboconk)	38.7	128,697.64	46,480.32	175,177.96
47	Hwy. 48 (Ringwood)–Hwys. 7, 12	17.8	6,415.14	89,513.31	95,928.45
48	Steeles Ave. (Toronto)–Hwy. 46 (Bolsover) [12]	54.7	321,592.50	255,881.24	577,473.74
50	Metro Toronto North Limits–Hwy. 9	19.2	304,426.93	86,018.39	390,445.32
52	Hwy. 2 (Alberton)–Wentworth / Wellington Cty Line	15.4	57,987.34	44,712.33	102,699.67
53	Hwy. 20–Hwy. 2 (Eastwood)	27.3	10,915.58	82,845.74	93,761.32
54	Hwy. 3 (Cayuga)–Hwy. 2 (Cainsville)	25.3	26,754.48	77,520.97	104,275.45
56	Hwy. 3–Hwy. 53 (Elfrida)	14.6	5,232.80	40,832.22	46,065.02
57	Hwy. 3A–Hwy. 20 (Bismark)	8.9	82,160.95	18,709.12	100,870.07
58	Hwy. 3–Hwy. 8 (St. Catharines)	14.8	41,812.36	57,424.45	99,236.81
59	Long Point Park–Shakespeare	66.5	62,767.61	207,902.38	270,669.99
60	Hwy. 17–Hwy. 35 (Huntsville [35]	133.9	645,061.02	257,246.40	902,307.42
61	Pigeon River (U.S.A. Bdry.)–Fort William	33.8	21,818.88	49,539.16	71,358.04
62	Hwy. 7 (Madoc)–Quebec Border [60]	114.2	1,399,858.42	228,377.65	1,628,236.07
63	North Bay–Timiskaming	38.7	45,195.21	104,373.20	149,568.41
64	Hwy. 69–Hwy. 11 (Marten River)	85.9	483,818.00	156,834.84	640,652.84
65	Quebec Border–Matachewan	80.4	323,584.20	172,872.67	496,456.87
66	Quebec Border–Hwy. 65	60.9	13,026.88	120,287.67	133,314.55
67	Sec. Hwy. 578 (Iroquois Falls)–Hwy. 101	20.9	34,522.48	37,058.20	71,580.68
68	South Baymouth–Hwy. 17 (Espanola)	82.2	796,373.66	312,918.61	1,109,292.27
69	Hwy. 12–Sec. Hwy. 545 (Capreol) [11]	202.7	312,455.50	558,513.82	870,969.32
71	Fort Frances–Hwy. 17 (Longbow Corners) [11]	99.7	56,170.79	130,526.83	186,697.62
72	Hwy. 17 (Dinorwic)–Sioux Lookout	43.5	58,231.81	86,378.80	144,610.61
73	Port Bruce–Dorchester	23.6	130,918.39	43,897.58	174,815.97
74	Hwy. 3 (New Sarum)–Nilestown	13.9	149,555.41	28,956.24	178,511.65
76	Hwy. 3 (Eagle)–Hwy. 2	11.3	7,389.34	16,622.48	24,011.82
77	Leamington–Hwy. 401 (M.C.F.) (Comber)	14.0	28,131.38	28,172.45	56,303.83
78	Hwy. 21 (Dresden)–Wallaceburg	10.0	742.14	69,472.30	70,214.44
79	Hwy. 2–Hwy. 7	28.8	6,211.03	60,905.84	67,116.87
80	Hwy. 2 (Strathburn)–Hwy. 40 (Courtright)	43.1	50,852.67	55,459.32	106,311.99
81	Hwy. 2 (Delaware)–Hwy. 21 (Grand Bend)	38.6	138,854.30	107,914.31	246,768.61
82	Hwy. 7–Hwy. 21 (Hanks Corners)	5.5	162.97	9,721.94	9,884.91
83	Hwy. 23 (Russeldale)–Hwy. 21 (Brewster)	24.1	4,982.25	49,980.22	54,962.47
84	Hwy. 4 (Hensall)–Hwy. 21 (St. Joseph)	10.7	567.91	17,785.32	18,353.23
85	Hwy. 8 (Kitchener)–Hwy. 86 (Elmira)	7.3	7,057.88	33,775.49	40,833.37
86	Hwy. 7–Hwy. 21 (Amberley)	78.6	650,638.42	241,342.28	891,980.70
87	Hwy. 9–Hwy. 86 (Bluevale)	19.6	18,488.10	50,639.69	69,127.79

Highway No.	Location	Mileage	Construction	Maintenance	Total
88	Hwy. 11–Hwy. 27 (Bondhead)	5.0	$ 904.83	$ 17,826.83	$ 18,731.66
89	Hwy. 400–Hwy. 23 (Wellington / Perth Cty. Line)	63.5	13,716.60	172,466.20	186,182.80
90	Barrie–Angus	12.4	17,614.00	44,819.31	62,433.31
91	Hwy. 26–Hwy. 24 (Duntroon)	5.1	29,830.57	21,107.17	50,937.74
92	Hwy. 27 (Elmvale)–Wasaga Beach	7.9	894.65	26,638.33	27,532.98
93	Hwy. 11 (Barrie)–Hwy. 27 (Waverly)	17.5	1,884.05	53,705.94	55,589.99
94	Hwy. 11 (Calander)–Hwy. 17	5.5	2,508.66	16,848.18	19,356.84
95	Hornes Point–Hwy. 96 (Wolfe Island)	7.1	5,854.95	21,830.78	27,685.73
96	Quebec Head– W End of Wolfe Island	20.4	129,907.88	43,688.20	173,596.08
97	Hwy. 6 (Freelton)–Hwy. 19	39.3	82,798.35	108,214.01	191,012.36
98	Hwy. 3 (Blenheim)–Hwy. 2 (Windsor)	55.2	115,016.10	72,098.70	187,114.80
99	Hwy. 8 (Dundas)–Hwy. 24	15.9	152,207.16	47,773.61	199,980.77
101	Quebec Border–Hwy. 17 (Wawa)	249.2	1,790,663.67	350,719.23	2,141,382.90
102	Hwy. 2 (Hamilton)–Hwy. 8 (Dundas)	.....	151.17	160.06	311.23
103	Hwy. 400–Hwy. 69 (Footes Bay) [12]	29.9	13,665.72	65,277.08	78,942.80
104	Hwy. 9–Grand Valley	1.8	.....	6,287.84	6,287.84
105	Hwy. 17 (Vermillion Bay)–Red Lake	110.2	699,496.62	164,113.95	863,610.57
106	Hwy. 28 (Dale)–Hwy. 2 (Welcome)	2.6	.....	8,313.48	8,313.48
107	Hwy. 18–Hwy. 3 (Ruthven)	1.0	8,020.95	1,312.92	9,333.87
108	Hwy. 17–Sec. Hwy. 639 (Quirke Lake)	26.0	32,420.05	68,257.45	100,677.50
112	Hwy. 11–Hwy. 66	12.4	772.98	34,560.11	35,333.09
114	Hwy. 3 (Maidstone)–Hwy. 98	1.2	5,447.50	877.67	6,325.17
115	Hwy. 401 (M.C.F.)–Peterborough [35]	17.1	12,378.08	59,194.08	71,572.16
116	Hwy. 72 (Patricia Corners)–Hudson Post Office	10.4	4,682.81	22,848.04	27,530.85
117	Steeles Ave.–Hwy. 7 (Bathurst St.)	1.3	.....	6,882.98	6,882.98
118	Hwy. 35–Hwy. 69 (Glen Orchard)	48.1	92,313.67	70,482.16	162,795.83
119	Hwy. 17 (Dryden)–Richan	13.9	.....	12,704.14	12,704.14
120	Hwy. 400–Jct. Hwys. 11, 93 (old 400)	0.7	.....	3,390.38	3,390.38
121	Hwy. 28–Hwy. 35 (Fenelon Falls)	81.8	112,032.59	127,901.66	239,934.25
122	Q.E.W. N. of Clarkson–Q.E.W. (Oakville)	3.8	21,061.01	29,888.79	50,949.80
123	Hwy. 11–North Bay Airport	4.5	4,860.53	16,330.64	21,191.17
124	Hwy. 69 (Parry Sound)–Hwy. 11 (Sundridge)	49.6	286,168.57	126,391.94	412,560.51
125	Hwy. 105–Cochenour Mine	7.7	2,805.51	10,148.92	12,954.43
126	Hwy. 401 (M.C.F.)-Hwy. 2 (London)	3.2	311,610.80	14,710.57	326,321.37
127	Hwy. 62 (Maynooth)–Hwy. 60	33.2	19,939.29	44,892.65	64,831.94
128	Kenora–Redditt	17.7	9,257.63	26,332.90	35,590.53
129	Hwy. 17–Chapleau	139.6	88,040.84	328,843.92	416,884.76
130	Port Arthur–Hwy. 61	17.8	105,526.26	29,832.26	135,358.52
132	Hwy. 41–Renfrew	17.8	2,425.53	24,874.38	27,299.91
133	Hwy. 33 (Millhaven)–Hwy. 401 (M.C.F.)	1.4	78,480.35	4,178.38	82,658.73
135	Hwy. 401 (M.C.F.) (London)–Hwy. 2	3.8	14.70	7,874.72	7,889.42
136	Hwy. 24–Orangeville	7.8	177,428.30	24,174.29	201,602.59
137	Hwy. 401 (M.C.F.)–Thousand Island Bridge	1.1	6,805.13	3,313.89	10,119.02
400	Hwy. 401 (M.C.F.)–Hwy. 12 (Coldwater)	73.7	873,296.45	519,578.12	1,392,874.57
401	Macdonald-Cartier Freeway Quebec Bdr.–Hwy. 3B (Windsor)	511.1	37,188,011.06	3,496,288.50	40,684,299.56
402	Hwy. 7–Bluewater Bridge	3.7	1,334,498.84	21,254.46	1,355,753.30
403	Q.E.W.–Hamilton	6.0	4,578,529.66	73,131.13	4,651,660.79

Highway No.	Location	Mileage	Construction	Maintenance	Total
404	Extension of Don Valley Parkway	.....	$ 64,787.16	$	$ 64,787.16
405	Q.E.W.–International Bridge (Queenston)	5.5	115,389.90	29,270.01	144,659.91
406	Welland–St. Catharines	.....	894,851.38	.....	894,851.38
407	Hwy. 115–Hwy. 27 (proposed)	.....	261,247.95	.....	261,247.95
QEW	Fort Erie–Toronto	96.4	4,832,762.67	1,328,729.14	6,161,491.81
	TOTAL EXPENDITURE ALLOCATED TO KING'S HIGHWAYS		$99,903,185.57	$28,860,156.59	$128,763,342.16
	SECONDARY HIGHWAYS				
500	Jct. Hwy. 62–Hwy. 41 (Denbigh)	38.7	194,001.70	93,531.46	287,533.16
501	Hwy. 103–Honey Harbour	9.2	9,848.89	19,580.22	29,429.11
502	Hwy. 2 (Napanee)–Hwy. 2 (Marysville)	8.7	.....	15,690.77	15,690.77
503	Hwy. 46 (Kirkfield)–Hwy. 121 (Tory Hill)	78.2	135,231.28	118,134.22	253,365.50
504	Sec. Hwy. 620 (Glen Aloa)–Hwy. 28 (Apsley)	16.3	80,712.21	33,981.26	114,693.47
505	Hwy. 46–Sec. Hwy. 503	12.7	5,724.00	27,514.06	33,238.06
506	Hwy. 41–Plevna	22.1	151,917.16	53,645.13	205,562.29
507	Hwy. 28 (Lakefield)–Gooderham	39.6	16,186.53	90,107.21	106,293.74
508	Burnstown–Black Donald Mine	24.0	107,163.90	43,301.06	150,464.96
509	Hwy. 7–Snow Road	13.1	59,531.84	32,576.66	92,108.50
510	Sec. Hwy. 520–Hwy. 124	1.9	.....	5,398.78	5,398.78
511	Brightside–Sec. Hwy. 508 (Calabogie)	20.5	38,118.54	33,416.66	71,535.20
512	Hwy. 41 (Eganville)–Hwy. 60	29.4	50,603.59	52,266.66	102,870.25
513	Hwy. 132 (Dacre)–C.N.R. Crossing, E. of Caldwell	10.2	5,702.88	25,277.21	30,980.09
514	Hwys. 35, 60–Interlaken	10.0	322.20	30,731.16	31,053.36
515	Quadeville–Hwy. 62 (Combermere)	17.4	60,491.62	51,237.97	111,729.59
516	Port Sidney–Windermere	16.0	14,246.55	26,433.67	40,680.22
517	Hwy. 62–New Carlow	10.4	6,894.08	29,014.94	35,909.02
518	Sand Lake–Hwy. 69	54.3	72,379.98	149,498.30	221,878.28
519	Hwy. 121–Red Stone Lake	34.0	12,401.18	63,992.23	76,393.41
520	Hwy. 11–Ardbeg	32.0	118,497.08	106,164.00	224,661.08
521	Hwy. 62 (S. of Round Lake–N. of Round Lake)	13.2	12,353.95	19,927.31	32,281.26
522	Hwy. 11 (Trout Creek)–Loring	36.5	165,388.51	60,645.82	226,034.33
523	Hwy. 60 (Madawaska)–Hastings Cty. N. Limits	13.5	20,986.60	36,463.78	57,450.38
524	Sec. Hwy. 522–Sec. Hwy. 534	3.1	.....	6,897.39	6,897.39
525	Gravenhurst–Muskoka Lake Sanitarium	1.5	423.14	2,693.91	3,117.05
526	Hwy. 69–Britt	2.3	19.54	11,701.76	11,721.30
527	Hwy. 118 (Baysville)–Hwy. 11B (Huntsville)	14.5	3,212.02	24,754.19	27,966.21
528	Hwy. 64–Wolseley Bay	8.3	10,939.89	27,075.70	38,015.59
528A	Sec. Hwy. 528–Pine Cove Landing	3.3	1,485.80	9,301.28	10,787.08
529	Hwy. 69–Hwy. 69 (Magnetawan)	15.9	18,022.51	51,891.63	69,914.14
529A	Sec. Hwy. 529–Bayfield Wharf Rd.	3.0	.....	8,584.12	8,584.12
530	Sec. Hwy. 519–Hwy. 35	12.5	185,186.76	28,182.80	213,369.56
531	Hwy. 17–Bonfield	2.4	5,336.14	6,311.07	11,647.21
532	Hwy. 11–Hwy. 69	40.9	310,161.65	106,739.90	416,901.55
533	Hwy. 17 (Mattawa)–Hwy. 63	31.6	176,126.60	58,441.51	234,568.11
534	Hwy. 11B (Powassan)–Restoule	21.9	95,251.67	68,124.34	163,376.01
535	Hwy. 64 (Noelville)–Riviere Veuve	29.9	125,927.54	65,019.08	190,946.62
536	Hwy. 17–Creighton Mine	3.8	.....	7,895.66	7,895.66
537	Hwy. 69–Hwy. 17 (Wanapitei)	12.2	87,626.65	47,985.95	135,612.60
538	Hwy. 17 East and West of Algoma	4.1	5,048.22	6,624.85	11,673.07
539	Hwy. 17 (Warren)–Hwy. 64 (Field)	24.8	107,885.10	61,324.24	169,209.34
539A	Sec. Hwy. 539–River Valley	0.8	387.13	566.27	953.40
540	Hwy. 68 (Little Current)–Meldrum Bay	85.4	91,496.85	219,971.91	311,468.76
540A	Sec. Hwy. 540–Barrie Island	2.5	.....	4,145.75	4,145.75

Highway No.	Location	Mileage	Construction	Maintenance	Total
541	Hwy. 17 (Sudbury)–Skead	15.7	$ 27,437.59	$ 65,454.36	$ 92,891.95
541A	Sec. Hwy. 541–Falconbridge	2.6	505.11	3,859.15	4,364.26
542	Hwy. 68–Sec. Hwy. 540 (Gore Bay)	43.0	95,851.48	109,457.99	205,309.47
542A	Sec. Hwy. 542–Tehkumah	1.4	.....	1,565.18	1,565.18
543	Hwy. 69 (Sudbury)–Long Lake	5.1	19,063.63	14,989.64	34,053.27
544	Sudbury–Geneva Lake Mine	67.1	982,153.12	135,515.35	1,117,668.47
544A	Sec. Hwy. 544–Levack	1.3	.....	1,603.64	1,603.64
545	Sec. Hwy. 541–Milnet	17.0	Cr. 4,521.12	44,436.77	39,915.65
546	Hwy. 17 (Iron Bridge)–Mount Lake	49.8	21,164.01	66,144.81	87,308.82
547	Hwy. 101 (Wawa)–Hawk Jct	3.4	151,898.42	5,940.14	157,838.56
548	Hwy. 17–Hilton Beach Turn-off	45.6	85,260.83	84,347.89	169,608.72
549	Lake Panache–Hwy 17	9.1	76,116.81	34,644.85	110,761.66
550	Hwy. 17 (Sault Ste. Marie)–Gros Cap	13.6	543,940.61	61,122.92	605,063.53
551	Sec. Hwy. 540–Providence Bay	12.2	10,715.45	35,327.59	46,043.04
552	Island Lake–Goulais Bay	13.4	1,539.87	49,165.86	50,705.73
553	Hwy. 17 (Massey)–Richie Falls Camp	50.2	4,820.50	58,311.49	63,131.99
554	Hwy. 129–Sec. Hwy. 546	10.9	966.35	14,489.19	15,455.54
555	Sec. Hwy. 557–Granary Lake Landing	7.0	36,929.53	17,670.76	54,600.29
556	Hwy. 17 (Heyden)–Christiana Mine Road	26.3	11,604.37	70,035.97	81,640.34
557	Hwy. 17 (Blind River)–Matinenda Lake	13.5	20,652.67	41,696.72	62,349.39
558	Hwy. 11 (Haileybury)–Montreal River	16.9	16,256.26	31,989.69	48,245.95
559	N. of Nobel–N. of Shawanaga	13.5	.....	40,442.91	40,442.91
560	Hwy. 11 (Englehart)–Gogama	143.4	67,723.64	234,362.86	302,086.50
560A	Sec. Hwy. 560–Westree	6.2	.....	6,644.47	6,644.47
561	Hwy. 17 (Bruce Mines)–Sec. Hwy. 638	12.8	6,300.31	43,033.23	49,333.54
562	Hwy. 11–Hwy. 65	9.0	26.13	27,004.29	27,030.42
563	Hwy. 17–Batchawana Bay	3.4	.....	10,728.04	10,728.04
564	Hwy. 112 (Tarzwell)–Blanche River	9.8	67.55	13,293.54	13,361.09
565	Sec. Hwy. 550–Pte Aux Pins	3 5	747 31	9,641.66	10,388.97
566	Hwy 65 (Matachewan)–Ashley Mine	15.6	13,303.98	26,105.92	39,409.90
567	Hwy. 11 (North Cobalt)–Silver Centre	21.7	18,869.52	45,152.46	64,021.98
568	Hwy. 11–Kenogami	1.0	21.17	1,267.98	1,289.15
569	Hwy. 11–Jct. Hwy. 11 and Sec. Hwy. 624	17.5	56,693.58	56,323.13	113,016.71
570	Hwy. 11–Sesekinika	1.9	27,708.72	4,829.64	32,538.36
571	Sec. Hwy. 562–Hwy. 11 (Earlton)	3.7	245.10	11,622.18	11,867.28
572	Hwy. 11 (Ramore)–Holtyre	5.0	7,144.13	12,995.23	20,139.36
573	Hwy. 11–Sec. Hwy. 560 (Charlton)	12.5	12,637.06	37,020.67	49,657.73
574	Norembega–Sec. Hwy. 579	18.0	74,790.90	82,962.60	157,753.50
575	Hwy. 101 (Night Hawk Centre) Southerly	3.0	.....	2,031.29	2,031.29
576	Hwy. 101–Kam-Kotia Mine	14.8	83,734.36	38,065.68	121,800.04
577	Hwy. 101 (Shillington)–Hwy. 67 (Ansonville)	15.8	37,809.45	34,640.43	72,449.88
578	Hwy. 11 (Nellie Lake)–Hwy. 67 (Iroquois Falls)	5.1	68,314.59	26,191.00	94,505.59
579	Hwy. 11 (Cochrane)–Gardiner	21.8	68,942.02	53,597.98	122,540.00
580	Hwy. 11–D.H.O. Park (Lake Nipigon)	7.7	168.45	3,203.99	3,372.44
581	Hwy. 11 (Moonbeam)–Remi Lake	3.1	14,519.05	4,120.01	18,639.06
582	Hwys. 11, 17–Hurkett–Hwys. 11, 17	4.0	.....	2,757.53	2,757.53
583	Mead–Lac Ste. Therese	30.1	40,327.51	93,501.42	133,828.93
584	Hard Rock Mine–Nakina	42.5	2,653.99	67,232.93	69,886.92
584A	Hwy. 11–Sec. Hwy. 584	2.4	.....	82.58	82.58
585	Hwys. 11, 17–Pine Portage	22.9	18,372.08	28,271.56	46,643.64
586	Hwy. 11–Lower Shebandown Lake	3.3	.....	2,611.80	2,611.80

Highway No.	Location	Mileage	Construction	Maintenance	Total
587	Hwys. 11, 17–Silver Islet	22.6	$ 2,703.13	$ 53,280.00	$ 55,983.13
588	Hwys. 11, 17–Round Lake Road	34.8	74,671.91	71,327.05	145,998.96
589	Hwys. 11A, 17A–Dog Lake Road	18.7	1,013.60	36,228.37	37,241.97
590	Hwy. 130–Sec. Hwy. 588	25.1	5,937.14	47,104.85	53,041.99
591	Sec. Hwy. 589–Northerly	4.9	19.91	8,279.55	8,299.46
592	Hwy. 11 (Novar)–Hwy. 11 (N. of Sec. Hwy. 518	10.2	.....	16,393.50	16,393.50
593	Sec. Hwy. 588–Silver Mountain	29.9	78,500.13	27,518.32	106,018.45
594	Dryden–Hwy. 17	20.6	43,837.73	16,133.82	59,971.55
595	Sec. Hwy. 590–Sec. Hwy. 597	25.3	32,729.84	47,683.12	80,412.96
596	Hwy. 17 (Keewatin)–Minaki	29.6	8,832.80	68,756.61	77,589.41
597	Sec. Hwy. 595–Sec. Hwy. 608	9.5	21,101.96	10,283.05	31,385.01
598	Sec. Hwy. 604–Hwy. 128	2.7	.....	9,437.97	9,437.97
599	Ignace–Badesdawa Lake	143.0	108,433.09	106,874.65	215,307.74
600	Hwy. 71–Hwy. 11 (Rainy River)	60.8	62,042.63	80,280.51	142,323.14
601	Hwy. 17 (Through Dryden)–Hwy. 17	15.5	78,897.58	19,093.15	97,990.73
602	Hwys. 11, 71 (Fort Frances)–Hwys. 11, 71 (Emo)	29.1	110,307.37	37,484.93	147,792.30
603	Hwy. 17–Dyment	2.8	.....	2,812.74	2,812.74
604	Hwy. 17 (Kenora)–Kenora Airport	7.8	9,556.67	20,700.36	30,257.03
605	Hwy. 17–Rugby Lake	7.7	31,909.37	8,662.18	40,571.55
606	Hwy. 17–Markstay	1.0	49.00	3,724.55	3,773.55
607	Hwy. 64–French River	7.4	107,209.35	24,825.27	132,034.62
607A	Sec. Hwy. 607–Hwy. 69	0.4	.....	903.88	903.88
608	Hwy. 61 (Moose Hill)–Sec. Hwy. 595	11.9	326.05	23,217.17	23,543.22
609	Hwy. 105–Clay Lake Landing	10.1	3,096.26	6,759.53	9,855.79
610	Hwy. 67–Hwy. 101	12.6	57,277.77	20,953.19	78,230.96
611	Sec. Hwy. 602–Burrlis / Miscampbell Twp. Line	12.5	.....	11,845.67	11,845.67
612	Hwy. 103–Hwy. 69 (Gordon Bay)	7.0	47.82	29,371.36	29,419.18
613	Sec. Hwy. 602–Lake Despair Landing	25.5	18,220.17	31,878.77	50,098.94
614	Hwy. 17–Manitouwadge	36.4	32,684.53	89,774.57	122,459.10
615	Hwy. 71–Clearwater Dock	13.6	917.92	16,517.16	17,435.08
616	Hwy. 101–Polomar (C.N.R.)	2.0	.....	1,135.52	1,135.52
617	Hwy. 11 (Stratton)–Sec. Hwy. 600	14.4	1,161.16	20,120.23	21,281.39
618	Hwy. 105–Madsen Mine	8.8	149.16	9,698.84	9,848.00
619	Hwy. 11 (Pinewood)–Sec. Hwy. 621	25.3	19,815.52	27,927.63	47,743.15
620	Hwy. 62–Hwy. 28	26.1	215,008.52	73,264.71	288,273.23
620A	Sec. Hwy. 620 (Apsley)–Hwy. 28	0.3	.....	564.15	564.15
621	Hwy. 11 (Sleeman)–Lake Of The Woods Dock	32.8	4,158.57	30,862.17	35,020.74
622	Hwy. 11 (Atikokan) Northerly	6.8	203.10	6,837.47	7,040.57
623	Hwy. 11–Sapawe	3.3	11,402.02	5,751.03	17,153.05
624	Hwy. 11 and Sec. Hwy. 569–Larder Lake	27.0	46,982.61	50,029.10	97,011.71
625	Caramat–Hwy. 11	20.0	26,467.75	30,556.35	57,024.10
626	Hwy. 101 (Matheson)–Hwy. 67 (Porquois Jct.)	19.8	5,089.50	22,070.86	27,160.36
627	Hwy. 17–Heron Bay	5.2	583.10	9,106.55	9,689.65
628	Hwys. 11, 17–Red Rock	4.4	28,461.95	7,097.04	35,558.99
629	Hwy. 101–Timmins Airport	6.7	.....	14,063.03	14,063.03
630	Hwy. 17–Kiosk	18.5	79,729.35	38,768.47	118,497.82
631	Hornepayne–Hwy. 11	46.6	78,610.16	86,400.38	165,010.54
632	Sec. Hwy. 532 (Rosseau)–Hwy. 118 (Port Carling)	16.0	33,594.01	42,323.57	75,917.58
633	Hwy. 11–Kawene	3.7	.....	1,686.76	1,686.76
634	Hwy. 69 (Val Caron)–Sec. Hwy. 544	11.8	203,463.88	28,854.65	232,318.53
635	Hwy. 17–Ottawa River	1.6	32,083.80	3,683.73	35,767.53
636	Hwy. 11–Frederickhouse Station	3.0	2,957.56	17,695.26	20,652.82
637	Killarney–Hwy. 69	41.8	128,687.66	100,654.45	229,342.11
638	Hwy. 17 (Echo Bay)–Dunns Valley	23.9	5,361.43	56,809.43	62,171.36
639	Hwy. 108–Sec. Hwy. 546 (proposed)	.....	69,057.64	7,728.04	76,785.68

Highway No.	Location	Mileage	Construction	Maintenance	Total
640	Jct. Hwy. 11 (Earlton)–Earlton Airport	1.7	$ 44,303.28	$ 3,966.14	$ 48,269.42
641	Hwy. 17–Pellatt	8.4	107.33	30,945.97	31,053.30
642	Sioux Lookout–Alcona	10.3	7,144.81	10,253.79	17,398.60
643	Nakina–Cavell	12.1	47.86	9,622.48	9,670.34
644	Hwy. 69 (Pointe au Baril)–Bay	0.6	8,445.02	2,180.58	10,625.60
645	Sec. Hwy. 529–Bing Inlet	2.5	643.21	9,632.19	10,275.40
646	Central Patricia–Pickle Lake	4.5	181.58	9,299.88	9,481.46
647	Vermilion Bay–Blue Lake Provincial Park	5.5	11,040.14	5,002.08	16,042.22
648	Hwy. 121 (E. of Tory Hill)–Hwy. 121	23.5	.....	24,273.26	24,273.26
649	Hwy. 36 (Bobcaygeon)–Union Creek	10.9	.....	18,359.92	18,359.92
650	Adams Mine–Hwy. 112 (Dane)	4.7	213,780.38	13,985.97	227,766.35
651	Hwy. 101–Renabie	.....	14,743.69	.....	14,743.69
652	Jct. Sec. Hwy. 574 Easterly	.....	268,733.15	.....	268,733.15
654	Calander–Nipissing	14.0	55,466.01	25,081.19	80,547.20
655	Jct. Hwy. 101 (Timmins) Northerly (proposed)	.....	67,585.64	.....	67,585.64
659	Kenora East Limits–Hwy. 128	10.0	.....	10,018.97	10,018.97
660	Hwy. 69 (Bala)–Hwy. 103	.....	288.35	.....	288.35
	TOTAL EXPENDITURE ALLOCATED TO SECONDARY HIGHWAYS		$7,862,580.70	$5,824,690.51	$13,687,271.21
	TERTIARY ROADS				
800	Jct. Hwys. 11, 17 (Port Arthur N. Limits)–N. of Whistle Lake	54.0	.....	$ 9,627.39	$ 9,627.39
801	Hwy. 11 (Nezah)–Sturgeon River Mine	8.8	$ 2,956.36	4,816.13	7,772.49
802	Hwy. 11 (Kashabowie)-Burchell Lake	8.5	36,587.09	4,299.97	40,887.06
804	Hwy 105 Westerly–Manitou Falls Road	12 8	.....	4,184 43	4,184 43
805	River Valley–Emerald Lake	35.0	47,337.44	24,780.66	72,118.10
806	Hwy. 545 (S. of Minlet) Northerly–Bigwood Lake	.....	64.25	1,202.46	1,266.71
807	Hwy. 11 (Smooth Rock Falls)–Fraserdale (Pinard)	.....	123,673.75	.....	123,673.75
	TOTAL EXPENDITURE ALLOCATED TO TERTIARY ROADS		$ 210,618.89	$ 48,911.04	$ 259,529.93
	SPECIAL AGREEMENTS:				
	Victoria Street (Town of Whitby)		$ 10,498.73	.....	$ 10,498.73
	County Road No. 15, North of Maitland		4,200.00	.....	4,200.00
	Jct. Hwy. 6–Brantford Township		Cr. 12,942.67	.....	Cr. 12,942.67
	Moose Creek Bridge, Twp. of Casey		8,051.69	.....	8,051.69
	Beach Blvd. (Town of Burlington)		3,008.74	.....	3,008.74
	TOTAL EXPENDITURE ALLOCATED TO SPECIAL AGREEMENTS		$ 12,816.49	.....	$ 12,816.49
	ACCESS ROADS:				
	Savant Lake South–Hwy. 17		Cr. $36,006.34	.....	Cr. $36,006.34
	Rusty Lake Mine Road		171,795.45	.....	171,795.45
	Panel Mine Road		.....	$ 5,061.76	5,061.76
	Denison Mine Road		.....	5,892.11	5,892.11
	Stanrock Mine Road		.....	17,799.45	17,799.45
	Milliken Mine Road		.....	6,572.43	6,572.43
	Algoma–Nordic Mine Road		.....	4,638.79	4,638.79
	Adams Mine–Dane		Cr. 1,596.59	.....	Cr. 1,596.59
	TOTAL EXPENDITURE ALLOCATED TO ACCESS ROADS		$ 134,192.52	$ 39,964.54	$ 174,157.06

Location	Construction	Maintenance	Total
INDUSTRIAL ROADS:			
Ignace–Valora	$ 19,003.60	$ 10,161.83	$ 29,165.43
Caramat–Manitouwadge		29,372.65	29,372.65
TOTAL EXPENDITURE ALLOCATED TO INDUSTRIAL ROADS	$ 19,003.60	$ 39,534.48	$ 58,538.08
Ferries	$ 10,216.09	$ 482,852.53	$ 493,068.62
Wilson Ave. (Avenue Rd.–Bathurst St.)	81,420.95		81,420.95
Bloor Street (Toronto)	1,825.00		1,825.00
Yonge Street (Toronto)	139,433.77		139,433.77
Ottawa Queensway	3,413,102.00	1,779.70	3,414,881.70
Macdonald Cartier Bridge (Ottawa)	2,243,555.32		2,243,555.32
Dixon Rd. (Hwy. 27–International Airport)	25,621.01		25,621.01
International Airport Road (Toronto)	Cr. 7,913.13		Cr 7,913.13
Kitchener–Waterloo Expressway	37,115.55		37,115.55
E. C. Rowe Boulevard (Windsor)	3,250.00		3,250.00
Welland Canal Tunnel	217,901.02		217,901.02
Thorold Tunnel	298,165.79		298,165.79
Carleton St. Tunnel (St. Catharines)	268,041.67		268,041.67
Miscellaneous Surveys	191,897.12		191,897.12
Sidewalks	68,126.56		68,126.56
Storm Sewers	322,188.21		322,188.21
Connecting Links	5,698,537.06	301,324.15	5,999,861.21
Unincorporated Township Roads	584,109.96	624,687.34	1,208,797.30
Development Roads	14,410,702.87	86,761.44	14,497,464.31
Lands and Building	1,785,004.92	226,368.40	2,011,373.32
Weigh Scales	25,289.09		25,289.09
HIGHWAY TOTALS	$137,959,988.60	$36,537,030.72	$174,497,019.32
Sundry unallocated, District Office, Administrative Engineering, Building, Inventory Charges, etc.	2,367,072.62	7,682,711.06	10,049,783.68
TOTAL EXPENDITURES	$140,327,061.22	$44,219,741.78	$184,546,803.00

[ ] Indicates that two highways share the same route; mileage for the section shared is shown against the bracketed highway.

APPENDIX No. 4

Counties

Chronological Summary of Road Expenditure and Provincial Subsidy

Year	Number of Counties	Approved Expenditure	Government Subsidy
1903	4	$ 166,149.06	$ 55,383.02
1904	7	291,085.42	97,028.48
1905	6	179,593.62	59,864.53
1906	8	247,102.37	82,367.45
1907	14	383,518.86	127,839.62
1908	15	429,393.57	143,131.16
1909	16	440,374.08	146,791.36
1910	17	553,312.61	184,437.54
1911	19	712,072.52	237,357.50
1912	20	898,631.18	299,543.69
1913	20	847,684.15	282,561.35
1914	20	785,521.93	261,840.61
1915	20	811,540.05	270,513.34
1916	21	955,447.19	327,663.76
1917	30	1,388,341.87	483,621.32
1918	36	2,226,899.70	815,440.01
1919	37	5,714,937.19	2,623,719.24
1920	37	7,956,863.72	3,626,418.08
1921	37	11,078,288.39	5,119,882.26
1922	37	9,162,491.79	4,258,339.83
1923	37	7,403,509.96	3,418,523.07
1924	37	6,861,451.62	3,214,321.50
1925	37	6,608,431.04	3,222,678.10
1926	37	5,838,445.12	2,913,660.96
1927	37	7,424,464.85	3,706,719.88
1928	37	8,784,420.42	4,360,222.86
1929	37	9,212,758.04	4,591,110.16
1930	37	8,929,424.27	4,463,527.11
1931	37	7,265,350.65	3,625,860.66
1932	37	4,214,410.70	2,106,457.18
1933	37	3,058,622.91	1,529,228.37
1934	37	3,391,768.96	1,695,291.35
1935	37	3,107,215.32	1,553,273.39
1936	37	3,438,188.53	1,718,944.63
1937	37	4,062,753.39	2,031,372.49
1938	37	4,686,333.38	2,342,971.65
1939	37	4,775,109.01	2,387,240.73
1940	37	4,496,702.25	2,247,977.06
1941	37	4,805,301.60	2,402,650.75
1942	37	3,221,505.02	1,610,752.54
1943	37	3,951,745.47	1,975,872.73
1944	37	4,675,028.89	2,365,507.20
1945	37	5,692,079.85	2,898,135.97
1946	37	7,392,946.45	3,769,755.43
1947	37	9,597,750.67	5,064,601.24
1948	37	11,345,808.93	6,176,598.43
1949	37	12,645,251.23	6,949,735.96
1950	37	12,863,429.71	6,923,703.44
1951	37	15,136,060.35	8,058,376.21
1952	37	17,373,344.83	9,276,797.84
1953	37	16,404,875.09	8,822,596.50
1954	37	17,221,063.01	9,393,936.07
1955	37	19,193,907.77	10,304,707.49
1956	37	22,632,299.59	12,042,792.32
1957	37	25,310,514.10	13,832,163.98
1958	37	27,044,966.20	14,603,895.24
1959	37	31,478,080.94	17,094,520.86
1960	37	32,090,731.87	17,613,395.23
1961	37	31,210,823.16	17,179,416.16
1962	37	35,033,598.28	19,025,879.89
1963	37	36,470,286.63	19,784,038.11
1964	37	37,118,003.14	20,361,773.04
Totals to Date		$588,698,012.47	$308,164,727.93

APPENDIX No. 5

County Road Mileages and Expenditures

From Inception of County Road Systems to December 31st, 1964
Provincial Subsidies on 1964 Expenditures Being Paid in the 1964-65 Fiscal Year

County	Year of Establishment of System	Road Mileages			Total Approved Expenditures to End of 1964	Total Government Grant
		County Roads	County Sub-urban	Total		
Brant	1917	63.9	61.5	125.4	$ 9,456,379.68	$ 5,092,854.92
Bruce	1917	314.0	.....	314.0	14,013,802.75	7,499,971.06
Carleton	1910	172.0	112.5	284.5	27,054,762.73	14,161,431.77
Dufferin	1918	169.1	.....	169.1	6,507,734.77	3,336,157.64
Elgin	1917	257.9	25.0	282.9	13,940,630.47	7,345,934.98
Essex	1916	206.6	53.0	259.6	23,975,049.28	12,491,433.78
Frontenac	1907	120.1	41.9	162.0	7,215,809.63	3,716,292.49
Grey	1918	318.4	33.5	351.9	15,591,844.24	8,074,022.14
Haldimand	1912	157.8	.....	157.8	13,551,222.49	7,199,944.00
Halton	1907	151.9	.....	151.9	10,781,545.47	5,486,603.04
Hastings	1904	241.0	16.2	257.2	10,343,640.57	5,243,313.53
Huron	1917	385.0	.....	385.0	16,218,397.03	8,791,143.85
Kent	1917	377.1	27 1	404.2	23,661,227.84	12,997,232.30
Lambton	1918	216.0	25.5	241.5	19,047,166.63	10,332,262.01
Lanark	1903	214.1	10.9	225.0	8,886,251.10	4,588,149.70
Leeds and Grenville	1910	297.4	35.5	332.9	12,665,155.58	6,381,500.43
Lennox and Addington	1906	168.5	.....	168.5	7,777,747.48	4,026,293.29
Lincoln	1904	113.4	46.8	160.2	14,385,265.32	7,235,537.31
Middlesex	1906	322.5	67.6	390.1	28,746,475.72	15,549,013.34
Norfolk	1917	216.6	.....	216.6	15,917,745.69	8,213,251.96
Northumberland and Durham	1918	286.1	12.7	298.8	15,009,372.65	7,835,171.06
Ontario	1918	243.6	30.8	274.4	14,771,709.78	7,825,300.12
Oxford	1904	202.5	13.9	216.4	15,539,268.70	8,109,420.16
Peel	1907	176.8	.....	176.8	22,466,164.69	12,039,426.08
Perth	1907	171.8	29.5	201.3	10,154,415.32	5,267,995.52
Peterborough	1919	136.4	50.8	187.2	8,326,220.43	4,534,248.79
Prescott and Russell	1917	322.9	.....	322.9	15,434,526.50	7,920,044.17
Prince Edward	1907	184.4	.....	184.4	7,846,355.48	3,950,761.69
Renfrew	1918	220.2	.....	220.2	12,534,555.46	6,532,811.74
Simcoe	1903	255.7	18.2	273.9	17,075,153.32	8,721,207.07
Stormont, Dundas and Glengarry	1917	381.1	61.0	442.1	17,380,743.37	8,912,715.40
Victoria	1917	231.3	.....	231.3	9,561,530.98	5,065,689.24
Waterloo	1908	103.0	117.0	220.0	18,465,652.26	9,884,651.78
Welland	1912	117.9	44.2	162.1	20,073,521.81	10,323,872.60
Wellington	1903	333.1	37.5	370.6	19,521,990.12	10,324,057.81
Wentworth	1903	1.5	168.0	169.5	17,407,154.98	8,775,723.38
York	1911	12.6	193.9	206.5	47,391,822.15	24,379,287.78
Totals		7,864.2	1,334.5	9,198.7	$588,698,012.47	$308,164,727.93

APPENDIX

Summary of County
(Government Subsidies Paid

County	Roads		Bridges and Culverts	
	Construction	Maintenance	Construction	Maintenance
Brant	$ 187,197.25	$ 213,727.10	$ 138,366.19	$ 8,111.61
Bruce	382,062.57	190,618.97	69,067.75	4,734.39
Carleton	278,740.33	128,937.25	21,858.03	6,683.16
Carleton (Ottawa Sub.)	847,406.17	141,548.70	72,793.14	7,680.58
Dufferin	165,798.49	128,872.69	40,168.47	Cr. 241.73
Elgin	503,799.98	210,915.84	97,973.77	18,440.13
Essex	1,020,059.14	362,958.53	204,825.56	5,055.92
Frontenac	319,148.78	186,742.64	86,741.19	3,599.75
Grey	565,202.44	281,092.40	41,772.65	3,875.60
Haldimand	718,377.34	79,105.17	672,139.66	145.94
Halton	380,003.20	299,188.65	23,107.21	8,460.25
Hastings	131,353.48	235,450.87	94,770.39	8,924.85
Huron	487,162.67	382,853.15	182,666.00	12,224.28
Kent	666,045.74	329,436.35	110,094.09	16,903.59
Lambton	792,716.38	296,097.23	365,143.38	3,369.83
Lanark	166,140.85	171,370.63	127,844.21	13,192.28
Leeds and Grenville	264,293.24	300,873.67	80,990.80	17,259.29
Lennox and Addington	352,863.18	145,445.80	11,081.01	554.31
Lincoln	397,464.53	277,042.06	35,553.26	1,155.84
Middlesex	1,045,962.70	311,354.03	646,817.91	51,442.88
Norfolk	602,621.27	265,631.29	92,922.88	4,181.22
Northumberland and Durham	632,753.38	225,119.62	211,646.14	11,038.62
Ontario	839,656.57	254,988.10	225,194.67	7,931.96
Oxford	417,947.39	312,406.64	179,154.71	6,825.31
Peel	624,125.20	341,331.72	325,336.97	6,282.00
Perth	402,898.83	148,360.55	18,318.63	16,620.87
Peterborough	284,402.13	165,842.76	237,410.06	6,255.85
Prescott and Russell	452,120.66	203,234.65	164,599.17	15,863.64
Prince Edward	286,181.25	157,742.04	30,690.72	76.86
Renfrew	354,628.23	200,785.35	8,484.59	5,654.46
Simcoe	582,346.57	349,771.65	171,095.79	3,281.13
Stormont, Dundas and Glengarry	372,596.59	258,477.24	143,004.77	12,808.32
Victoria	149,713.14	173,837.90	206,770.77	3,834.11
Waterloo	650,976.07	239,696.50	148,598.07	6,200.02
Welland	796,049.00	234,599.90	58,925.42	2,447.27
Wellington	259,577.74	546,369.14	177,049.13	11,243.82
Wentworth	372,600.10	316,005.99	104,601.56	7,866.58
York	1,504,849.33	253,245.59	58,010.76	3,664.02
Totals	$19,257,841.91	$ 9,321,078.36	$ 5,685,589.48	$ 323,648.81

Summary of Metropolitan

Metro Toronto Roads (50%)	$27,705,331.37	$ 2,584,733.10	$ 6,307,806.00	$ 162,883.65
Metro Toronto Subway (33⅓%)	17,375,569.38	.....	.....	.....

No. 6
Road Expenditures
in 1964-65 Fiscal Year)

Winter Control (Maintenance)	Approved Expenditure			Government Subsidy 50% and 80%
	Construction	Maintenance	Total	
$ 28,926.05	$ 325,563.44	$ 250,764.76	$ 576,328.20	$ 332,107.44
98,700.92	451,130.32	294,054.28	745,184.60	394,732.94
59,132.41	300,598.36	194,752.82	495,351.18	256,237.94
86,421.04	920,199.31	235,650.32	1,155,849.63	602,066.93
41,700.00	205,966.96	170,330.96	376,297.92	200,126.98
53,977.89	601,773.75	283,333.86	885,107.61	477,477.98
37,642.99	1,224,884.70	405,657.44	1,630,542.14	878,235.51
31,554.84	405,889.97	221,897.23	627,787.20	340,995.88
122,128.41	606,975.09	407,096.41	1,014,071.50	520,730.23
10,942.72	1,390,517.00	90,193.83	1,480,710.83	942,041.09
48,036.65	403,110.41	355,685.55	758,795.96	388,868.22
55,285.20	226,123.87	299,660.92	525,784.79	294,000.97
105,283.25	669,828.67	500,360.68	1,170,189.35	643,561.75
18,228.74	776,139.83	364,568.68	1,140,708.51	608,453.55
27,477.04	1,157,859.76	326,944.10	1,484,803.86	852,955.89
56,506.09	293,985.06	241,069.00	535,054.06	309,837.97
68,513.07	345,284.04	386,646.03	731,930.07	395,440.07
28,502.09	363,944.19	174,502.20	538,446.39	272,713.79
58,230.59	433,017.79	336,428.49	769,446.28	395,735.87
64,474.62	1,692,780.61	427,271.53	2,120,052.14	1,269,504.31
48,628.49	695,544.15	318,441.00	1,013,985.15	536,123.81
73,569.13	844,399.52	309,727.37	1,154,126.89	643,868.87
86,802.13	1,064,851.24	349,722.19	1,414,573.43	777,224.70
43,000.85	597,102.10	362,232.80	959,334.90	535,461.46
91,400.29	949,462.17	439,014.01	1,388,476.18	793,723.78
30,324.54	421,217.46	195,305.96	616,523.42	318,743.56
43,753.23	521,812.19	215,851.84	737,664.03	441,931.78
52,303.05	616,719.83	271,401.34	888,121.17	498,199.43
26,060.38	316,871.97	183,879.28	500,751.25	259,605.89
38,293.18	363,112.82	244,732.99	607,845.81	308,164.63
75,036.32	753,442.36	428,089.10	1,181,531.46	643,078.81
101,807.57	515,601.36	373,093.13	888,694.49	491,091.18
48,760.65	356,483.91	226,432.66	582,916.57	354,639.75
75,693.56	799,574.14	321,590.08	1,121,164.22	607,021.54
96,708.20	854,974.42	333,755.37	1,188,729.79	612,776.70
138,585.13	436,626.87	696,198.09	1,132,824.96	622,900.37
136,618.20	477,201.66	460,490.77	937,692.43	502,586.65
220,835.07	1,562,860.09	477,744.68	2,040,604.77	1,038,804.82
$2,529,844.58	$24,943,431.39	$12,174,571.75	$37,118,003.14	$20,361,773.04

Road Expenditures — 1964

$2,001,769.98	$34,013,137.37	$ 4,749,386.73	$38,762,524.10	$19,381,262.05
.....	17,375,569.38	.....	17,375,569.38	5,791,856.46

APPENDIX No. 7

Incorporated Townships — Chronological Summary of Road Expenditure and Provincial Subsidy Including Improvement Districts and Indian Reserves

Year	No. of Townships	Approved Expenditure	Subsidy
1920 to 1934	172–352	$ 58,408,281.44	$ 18,749,941.38
1935	353	2,945,424.37	1,233,806.48
1936	357	2,988,617.38	1,251,632.43
1937	358	3,857,518.61	1,943,344.98
1938	574	4,826,905.00	2,553,837.97
1939	583	5,392,981.59	2,865,752.12
1940	584	4,505,295.63	2,411,064.90
1941	584	5,452,286.74	2,917,816.44
1942	583	3,698,301.35	1,978,368.31
1943	584	5,512,990.52	2,929,508.15
1944	585	6,263,799.90	3,400,704.29
1945	596	7,696,533.87	4,177,608.83
1946	602	9,366,654.59	5,131,432.11
1947	604	12,562,798.76	7,064,222.50
1948	606	13,688,529.08	7,763,289.85
1949	609	15,262,451.16	8,658,125.77
1950	610	15,852,838.23	8,944,246.08
1951	610	18,774,705.27	10,544,324.37
1952	614	21,261,356.88	11,966,206.37
1953	615	20,448,782.51	11,477,684.36
1954	617	23,346,392.74	13,185,561.47
1955	619	27,026,146.81	15,376,232.29
1956	623	30,080,387.33	16,908,428.56
1957	624	33,147,636.96	18,530,211.67
1958	627	35,683,958.31	19,867,541.32
1959	626	41,789,335.40	23,376,726.39
1960	625	45,098,684.79	25,150,102.14
1961	632	44,505,542.38	24,919,087.33
1962	633	46,022,546.96	26,082,619.19
1963	634	51,317,254.17	29,923,461.38
1964	633	53,234,002.84	31,228,752.16
	Totals.....	$670,018,941.57	$362,511,641.59

Note:—574 Townships, 17 Improvement Districts and 42 Indian Reserves are represented in the above expenditures for 1964.

APPENDIX No. 8

Cities, Towns and Villages
Chronological Summary of Road Expenditures and Provincial Subsidy

Year	No. of Urban Municipalities	Approved Expenditure	Subsidy
1947	324	$ 5,334,316.72	$ 2,667,158.49
1948	327	5,614,300.68	2,807,150.46
1949	330	12,194,258.56	4,550,703.10
1950	331	12,834,506.55	4,823,922.36
1951	334	15,956,137.03	5,931,088.54
1952	333	15,898,102.64	5,946,052.04
1953	335	17,598,631.85	6,890,106.26
1954	336	18,223,848.41	7,021,797.64
1955	338	21,703,070.95	8,560,475.48
1956	339	24,456,353.43	9,612,156.92
1957	339	25,546,531.26	10,188,038.48
1958	340	30,231,140.62	11,723,534.51
1959	340	32,890,747.85	12,774,059.54
1960	341	36,899,762.02	14,506,072.66
1961	341	37,130,872.81	14,862,154.63
1962	345	40,193,137.14	15,903,508.14
1963	346	44,397,369.60	17,580,312.26
1964	346	51,665,358.26	20,535,895.02
	Totals.....	$448,768,446.38	$176,884,186.53

Note:—32 Cities, 7 Separated Towns, 150 Towns and 157 Villages are represented in the above expenditures for 1964.

APPENDIX No. 9

Mileage of Urban Road Surfaces at the End of 1964

Roads Under Local Authority

Counties	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bitumi-nous	Asphalt Con-crete	Cement Con-crete	Other	Total
Brant	.....	.....	52.7	84.6	34.1	23.0	.....	194.4
Bruce	6.5	3.9	54.7	62.7	13.4	.....	.....	141.2
Carleton	3.6	16.7	62.9	173.4	287.9	2.0	.....	546.5
Dufferin	0.9	1.4	13.3	0.5	10.3	1.7	.....	28.1
Elgin	8.5	0.4	34.1	37.1	42.3	1.1	1.1	124.6
Essex	4.0	17.8	68.6	48.0	102.3	263.1	2.7	506.5
Frontenac	0.3	.....	1.0	16.4	74.8	0.2	.....	92.7
Grey	0.5	28.8	37.6	69.1	10.0	2.0	.....	148.0
Haldimand	2.5	4.9	20.1	23.6	10.4	1.3	.....	62.8
Halton	7.2	14.7	175.4	217.6	135.1	4.8	.....	554.8
Hastings	0.5	0.3	26.2	70.4	31.0	0.2	.....	128.6
Huron	1.3	0.2	44.7	37.8	24.0	0.7	.....	108.7
Kent	11.0	1.4	44.5	11.1	131.6	10.9	.....	210.5
Lambton	18.1	4.5	72.5	73.3	69.0	6.3	.....	243.7
Lanark	26.3	0.3	29.6	32.3	27.1	0.7	.....	116.3
Lennox-Addington	0.2	.....	6.7	10.7	5.2	.....	.....	22.8
Leeds-Grenville	2.0	0.9	16.1	33.5	61.6	4.5	.....	118.6
Lincoln	1.7	7.0	26.7	204.1	79.7	57.5	.....	376.7
Middlesex	10.2	1.3	102.4	225.0	173.7	1.7	.....	514.3
Norfolk	3.8	.....	9.9	42.9	16.5	0.8	.....	73.9
Northumberland and Durham	7.1	1.3	43.8	87.3	71.1	4.5	.....	215.1
Ontario	18.3	0.2	77.3	86.1	138.4	.....	.....	320.3
Oxford	5.3	1.7	39.9	70.1	36.4	2.7	0.4	156.5
Peel	0.9	1.4	19.9	30.2	53.8	0.7	.....	106.9
Perth	11.6	7.3	53.9	42.6	39.4	0.7	.....	155.5
Peterborough	9.6	0.1	36.3	73.5	51.4	7.3	.....	178.2
Prescott-Russell	6.9	3.9	9.2	17.5	11.4	.....	.....	48.9
Prince Edward	.....	0.1	1.7	5.8	10.4	0.5	.....	18.5
Renfrew	5.4	0.9	51.2	29.2	60.7	0.2	.....	147.6
Simcoe	17.4	16.4	84.8	107.0	101.8	6.9	.....	334.3
Stormont, Dundas and Glengarry	3.1	.....	37.7	44.4	23.4	44.8	18.9	172.3
Victoria	16.7	.....	48.0	2.1	16.8	.....	.....	83.6
Waterloo	17.5	16.0	48.9	191.3	144.5	7.8	36.6	462.6
Welland	15.1	3.6	44.4	279.5	142.1	8.6	.....	493.3
Wellington	13.8	1.5	33.5	102.6	71.9	3.8	.....	227.1
Wentworth	0.5	2.8	24.6	151.0	361.3	1.6	.....	541.8
York	0.3	2.2	18.6	52.5	60.5	.....	.....	134.1
Totals—Counties	258.6	163.9	1,573.4	2,846.8	2,735.3	472.6	59.7	8,110.3
Metro. Tor. Area	1.1	.....	9.3	4.1	575.8	7.5	8.0	605.8
Districts								
Algoma	26.9	.....	57.6	4.8	90.1	4.4	1.0	184.8
Cochrane	23.4	7.8	70.7	30.4	46.4	.....	.....	178.7
Kenora	.....	0.2	44.2	10.4	29.6	0.1	0.4	84.9
Manitoulin	4.3	2.8	15.8	1.5	.....	.....	.....	24.4
Muskoka	18.0	0.4	45.3	25.5	11.6	.....	.....	100.8
Nipissing	24.1	8.7	52.4	11.9	37.8	.....	.....	134.9
Parry Sound	29.6	0.6	35.2	1.4	22.4	.....	.....	89.2
Rainy River	.....	1.3	29.6	7.9	10.0	0.5	0.4	49.7
Sudbury	16.2	5.5	92.7	77.3	117.2	0.7	.....	309.6
Temiskaming	.....	.....	34.5	1.0	21.5	.....	.....	57.0
Thunder Bay	.....	.....	91.3	47.6	107.9	1.2	.....	248.0
Totals—Districts	142.5	27.3	569.3	219.7	494.5	6.9	1.8	1,462.0
Grand Totals	402.2	191.2	2,152.0	3,070.6	3,805.6	487.0	69.5	10,178.1

APPENDIX

Mileage of Road Surfaces

Counties	COUNTY ROADS						
	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bitumi-nous Surface	Asphalt Con-crete	Cement Con-crete	Other
Brant	.....	.....	19.7	105.3	0.4	.....	.....
Bruce	.....	.....	120.7	118.3	75.0	.....	.....
Carleton	.....	.....	17.4	259.1	8.0	.....	.....
Dufferin	.....	.....	130.9	3.5	34.7	.....	.....
Elgin	.....	.....	99.9	165.6	17.4	.....	.....
Essex	.....	.....	79.5	71.2	98.1	9.9	0.9
Frontenac	.....	.....	46.6	103.2	12.2	.....	.....
Grey	.....	.....	241.5	91.5	18.9	.....	.....
Haldimand	.....	.....	29.6	128.2	.....	.....	.....
Halton	.....	.....	35.1	70.3	46.5	.....	.....
Hastings	.....	.....	163.4	78.1	13.6	2.1	.....
Huron	.....	.....	206.2	138.1	40.7	.....	.....
Kent	0.3	0.2	42.4	19.8	333.6	7.9	.....
Lambton	.....	.....	71.7	64.5	97.8	0.1	7.4
Lanark	.....	.....	113.0	111.6	0.4	.....	.....
Lennox and Addington	.....	.....	10.5	152.7	5.3	.....	.....
Leeds and Grenville	.....	.....	141.7	185.6	4.4	1.2	.....
Lincoln	0.9	.....	14.2	135.3	9.8	.....	.....
Middlesex	.....	.....	92.3	121.4	162.0	14.4	.....
Norfolk	0.2	.....	10.0	204.3	2.1	.....	.....
Northumberland-Durham	.....	.....	73.1	174.0	51.7	.....	.....
Ontario	.....	.....	77.8	103.7	92.9	.....	.....
Oxford	.....	.....	59.4	99.5	46.0	11.5	.....
Peel	.....	.....	30.6	62.9	82.4	0.9	.....
Perth	.....	.....	45.2	91.7	64.4	.....	.....
Peterborough	.....	.....	108.8	41.2	37.2	.....	.....
Prescott-Russell	.....	.....	146.2	160.9	15.8	.....	.....
Prince Edward	.....	.....	37.3	120.2	26.9	.....	.....
Renfrew	.....	.....	60.1	7.4	152.7	.....	.....
Simcoe	.....	.....	148.9	27.0	98.0	.....	.....
Stormont-Dundas-Glengarry	.....	.....	121.8	281.4	38.3	0.6	.....
Victoria	.....	.....	118.2	88.0	25.1	.....	.....
Waterloo	.....	.....	23.5	137.1	56.6	2.8	.....
Welland	2.5	.....	7.0	106.7	45.9	.....	.....
Wellington	.....	.....	152.5	104.9	112.8	0.4	.....
Wentworth	.....	.....	2.5	167.0	.....	.....	.....
York	.....	.....	19.4	23.4	163.7	.....	.....
Totals—Counties	3.9	0.2	2,918.6	4,124.6	2,091.3	51.8	8.3
							Metropolitan
Metro. Toronto Area	4.0	.....	1.8	5.5	343.2	8.3	.....
Districts							
Algoma	.....	.....	.....	.....	.....	.....	.....
Cochrane	.....	.....	.....	.....	.....	.....	.....
Haliburton	.....	.....	.....	.....	.....	.....	.....
Kenora	.....	.....	.....	.....	.....	.....	.....
Manitoulin	.....	.....	.....	.....	.....	.....	.....
Muskoka	.....	.....	.....	.....	.....	.....	.....
Nipissing	.....	.....	.....	.....	.....	.....	.....
Parry Sound	.....	.....	.....	.....	.....	.....	.....
Rainy River	.....	.....	.....	.....	.....	.....	.....
Sudbury	.....	.....	.....	.....	.....	.....	.....
Temiskaming	.....	.....	.....	.....	.....	.....	.....
Thunder Bay	.....	.....	.....	.....	.....	.....	.....
Total—Districts	.....	.....	.....	.....	.....	.....	.....
Unorganized Townships	.....	.....	.....	.....	.....	.....	.....
Grand Totals	7.9	0.2	2,920.4	4,130.1	2,434.5	60.1	8.3

No. 10

at the End of 1964

Total	INCORPORATED—TOWNSHIP ROADS							
	Legally Open	Earth Graded and Drained	Gravel or Stone	Light Bituminous Surface	Asphalt Concrete	Cement Concrete	Other	Total
125.4	12.3	12.7	464.0	50.8	.....	.....	.....	539.8
314.0	81.1	98.5	1,597.1	42.5	9.1	.....	.....	1,828.3
284.5	41.1	67.6	829.9	52.5	8.0	.....	.....	999.1
169.1	31.9	22.1	695.4	.....	0.3	.....	.....	749.7
282.9	26.2	41.6	802.8	6.8	2.8	0.5	.....	880.7
259.6	22.1	25.4	812.0	108.3	62.5	29.8	.....	1,060.1
162.0	153.1	70.1	904.7	33.5	19.9	.....	.....	1,181.3
351.9	140.3	112.0	1,942.1	12.9	5.6	0.5	.....	2,213.4
157.8	25.0	49.1	456.1	76.6	11.4	.....	.....	618.2
151.9	11.5	2.0	208.6	1.5	1.5	.....	.....	225.1
257.2	257.8	207.3	1,279.0	29.5	3.2	.....	.....	1,776.8
385.0	14.6	67.2	1,422.4	18.2	15.3	.....	.....	1,537.7
404.2	9.0	17.7	1,168.5	2.2	25.0	0.4	1.0	1,223.8
241.5	15.3	122.8	1,249.5	59.3	4.6	.....	10.0	1,461.5
225.0	51.6	89.1	838.6	32.5	.....	.....	.....	1,011.8
168.5	157.3	63.9	552.4	34.6	0.2	.....	.....	808.4
332.9	223.0	106.3	973.0	76.2	17.4	0.9	.....	1,396.8
160.2	80.2	79.2	428.6	74.8	0.4	0.9	.....	664.1
390.1	43.4	25.4	1,554.7	23.3	16.8	0.4	.....	1,664.0
216.6	29.1	99.4	541.0	213.5	30.3	.....	.....	913.3
298.8	482.1	220.9	1,757.9	130.2	18.7	.....	.....	2,609.8
274.4	156.1	30.0	977.2	48.7	68.1	.....	.....	1,280.1
216.4	10.7	5.0	981.7	13.6	35.9	.....	.....	1,046.9
176.8	32.7	9.0	484.0	157.2	108.4	.....	.....	791.3
201.3	20.2	7.6	1,012.1	2.1	0.3	.....	.....	1,042.3
187.2	53.9	35.2	873.9	23.8	4.1	.....	.....	990.9
322.9	54.4	230.0	715.5	7.7	.....	.....	.....	1,007.6
184.4	9.2	7.8	393.5	4.9	3.4	1.2	.....	420.0
220.2	205.3	320.5	1,295.2	1.4	21.0	.....	.....	1,843.4
273.9	148.5	49.0	1,990.7	90.8	65.9	.....	.....	2,344.9
442.1	48.5	109.3	1,079.6	26.7	24.3	.....	.....	1,288.4
231.3	41.0	32.7	870.6	7.6	0.5	.....	.....	952.4
220.0	2.1	1.7	529.8	61.8	3.4	0.9	0.7	600.4
162.1	185.8	142.4	444.7	276.6	28.2	1.1	.....	1,078.8
370.6	15.0	65.3	1,068.7	20.9	9.1	0.2	.....	1,179.2
169.5	37.8	23.1	430.7	61.6	.....	.....	.....	553.2
206.5	58.5	3.9	708.9	65.8	91.3	.....	.....	928.4
9,198.7	2,987.7	2,672.8	34,335.1	1,950.9	716.9	36.8	11.7	42,711.9
Roads								
362.8	112.3	49.2	99.9	450.9	890.5	119.8	.....	1,722.6
.....	75.8	67.4	649.3	1.2	29.4	.....	.....	823.1
.....	129.2	45.6	508.7	19.7	9.0	.....	.....	712.2
.....	27.1	25.0	410.2	67.2	0.4	.....	.....	529.9
.....	1.9	1.4	215.4	1.0	0.3	.....	0.7	220.7
.....	26.3	51.0	498.1	.....	.....	.....	.....	575.4
.....	103.0	82.2	637.6	131.5	1.9	.....	1.8	958.0
.....	82.1	64.3	455.3	11.4	22.9	.....	.....	636.0
.....	195.8	47.9	856.7	39.5	12.4	.....	.....	1,152.3
.....	26.8	51.3	534.3	1.1	.....	.....	.....	613.5
.....	51.1	98.5	599.1	6.6	26.5	0.2	40.1	822.1
.....	66.5	34.5	519.7	13.2	31.7	.....	.....	665.6
.....	56.5	20.5	583.8	88.5	45.4	.....	.....	794.7
.....	842.1	589.6	6,468.2	380.9	179.9	0.2	42.6	8,503.5
.....	485.9	566.9	3,681.9	13.8	1.2	.....	.....	4,749.7
9,561.5	4,428.0	3,878.5	44,585.1	2,796.5	1,788.5	156.8	54.3	57,687.7

APPENDIX No. 11

Summary of Expenditures on Urban Streets — 1964

Approved 1964 Expenditures by Cities, Towns and Villages Under Part X of the Highway Improvement Act

Municipal Road District No.	Approved Expenditures—1964				Government Subsidy 33⅓%, 50% and 80%
	Cities (32) Sep. Towns (7)	Towns (150)	Villages (157)	Urban Total (346)	
1	$ 2,722,588.69	$ 492,485.03	$ 187,933.39	$ 3,403,007.11	$ 1,261,198.67
2	4,379,970.75	436,214.69	137,276.89	4,953,462.33	2,006,701.72
3	2,826,735.77	985,235.80	150,084.95	3,962,056.52	1,559,093.64
4	8,005,634.48	1,129,882.98	231,443.96	9,366,961.42	3,709,182.06
5	549,800.00	380,404.45	120,488.85	1,050,693.30	444,593.50
6	597,675.19	3,278,031.51	322,138.18	4,197,844.88	2,088,032.39
6 MTA	5,245,723.83	539,485.39	182,322.90	5,967,532.12	2,109,730.37
7	3,155,081.70	1,029,658.02	166,899.28	4,351,639.00	1,659,099.40
8	1,053,087.74	66,740.88	114,723.44	1,234,552.06	453,919.75
9	5,734,746.30	333,433.52	199,168.96	6,267,348.78	2,191,018.64
10	.....	319,634.96	145,138.42	464,773.38	238,765.26
11	.....	298,131.07	64,703.53	362,834.60	187,839.35
12	.....	92,687.50	26,446.08	119,133.58	60,608.78
13	250,368.21	185,459.12	4,000.00	439,827.33	179,289.67
14	.....	881,794.20	988.00	882,782.20	442,752.41
16	.....	242,498.18	.....	242,498.18	122,573.17
17	1,325,119.59	433,744.59	.....	1,758,864.18	800,534.76
18	732,999.51	67,668.92	4,654.73	805,323.16	282,450.69
19	1,135,945.33	29,440.48	.....	1,165,385.81	393,587.47
20	.....	668,838.32	.....	668,838.32	344,923.32
Totals.....	$37,715,477.09	$11,891,469.61	$ 2,058,411.56	$51,665,358.26	$20,535,895.02

APPENDIX No. 12

Development Road Expenditures in Municipalities — 1964

(Authorized by Part XI of the Highway Improvement Act)

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1964–65
34R	Dillon Cove Road	10.0	Carling	Parry Sound	$ 8,907.71
57R	Centreville–Enterprise Road	5.0	Camden East	Lennox and Addington	163,223.38
117R	Combermere–Rockingham	6.8	Radcliffe	Renfrew	58,937.94
202R	Champlain Road	4.0	Tiny	Simcoe	93,409.71
216R	Oro–Medonte Townline	7.0	Oro and Medonte	Simcoe	23,156.45
285R	Escott–Rockport Road	5.7	Escott Front	Leeds and Grenville	60,297.73
311R	McKnight Road	2.5	Hinchinbrooke	Frontenac	99,721.92
396R	Dawson Point Road	3.0	Harris	Temiskaming	17,780.02
409	Rosseau–Huntsville Road	9.5	Cardwell	Muskoka	51,055.58
415	Snow Road–Ompah	15.0	Palmerston, North and South Canonto	Frontenac	67,404.00
462R	Concession XII/XIII Road	3.25	South Himsworth	Parry Sound	2,116.91
471	Alvinston–Courtright Road	30.75	County	Lambton	34.36
491	Flesherton–Singhampton Road	15.8	County	Grey	186.60
495	Morganston–Cuff's Corners	11.0	County	Northumberland and Durham	3,595.78
498	Spanish River Bridge	.3	Salter, May, Harrow, Town of Massey	Sudbury	113.48
517	Pigeon Lake Road	14.5	County	Victoria	60,575.05
530	River Road	6.0	Salter, May, Harrow	Sudbury	55,497.82
535	Hay Bay Road	6.0	South Fredericksburg	Lennox and Addington	12,765.31
539	Hastings–Keene	12.5	County	Peterborough	2,620.40
541	Admaston–Bagot Townline	10.4	Admaston and Bagot	Renfrew	44,507.57
550	Sideroad 15/16	5.0	Wollaston	Hastings	8,057.59
557	Parham–Wagarville Road	4.4	Hinchinbrooke	Frontenac	70,420.10
559	Concession IV/V	4.5	Loehiel	Stormont, Dundas and Glengarry	8,008.50
563	Webbwood Bridge and approaches	0.14	Hallam	Sudbury	2,293.52
572	Warburton–Long Point	6.0	County	Leeds and Grenville	70,350.87
573	County Road No. 21	9.7	County	Stormont, Dundas and Glengarry	Cr. 89.00
578	Port Cunnington Road	4.5	Franklin	Muskoka	1,218.49
580	Gooderham–Haliburton	11.1	Dysart et al and Glamorgan	Haliburton	161,337.56
581	Essa–Innisfil Townline	4.2	Essa and Innisfil	Simcoe	38,913.13
585	County Road No. 39 (Part)	1.0	County	Elgin	25,495.67
587R	Havelock–Rush Point	17.7	Belmont and Methuen	Peterborough	78,915.45
588	County Road No. 1 (part)	14.2	County	Hastings	428,930.34
594	Huntsville–Rousseau (part)	8.0	Stisted and Stephenson	Muskoka	145,063.82
602	Rose Corners to Cambridge Boundary	3.6	County	Prescott and Russell	Cr. 51.50
607	Victoria Road	0.7	Calvert	Cochrane	118.57
608	Wilno to Radcliffe Boundary	2.7	Hagarty, Richards, Sherwood, etc.	Renfrew	3,941.81
609	Hornings Mills–Terra Nova (part)	7.1	Mulmur	Dufferin	47,540.64
610	Hornings Mills Bridge	0.9	Melancthon	Dufferin	222.36

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1964–65
613	Fallbrook westerly	8.0	Bathurst	Lanark	69,229.03
614R	Humphry Boundary northerly	2.0	Christie	Parry Sound	2,520.56
615	Brightside–Hopetown Road	3.8	County	Lanark	9,372.18
618	County Road No. 3 (part)	12.0	County	Dufferin	131,597.85
621	Vars to Osgoode Twp. Boundary	4.5	Cumberland	Prescott and Russell	19,108.48
622	Innisville Easterly Road	3.0	Drummond	Lanark	12,373.25
626	Tamworth Easterly Road	4.0	Sheffield	Lennox and Addington	3,894.64
627	Concession I/II Road	1.2	Nassagaweya	Halton	9,864.52
629	Concession VI/VII Road	2.5	Bonfield	Nipissing	91,227.77
635	County Road No. 2 (part)	0.7	County	Haldimand	12,942.67
637	County Road No. 65 (part)	2.5	County	Wellington	40,002.50
638	Sideroad 5/6	6.0	West Gwillimbury	Simcoe	48,607.07
639	Morley/Shenston Townline	7.0	Morley	Rainy River	2,339.57
642	County Road No. 16 (part)	8.5	County	Leeds and Grenville	136,024.05
644	12 Mile Bay Road	8.0	Freeman	Muskoka	335,642.71
646	Bellrock Road	6.1	County	Frontenac	91,158.50
647	Cockshutt Road	5.6	County	Brant	151,333.00
648	Fitzroy Station Road	3.95	Fitzroy	Carleton	25,469.48
649	Musclow–Greenview Road	2.8	Monteagle	Hastings	122,223.98
650	County Road No. 13 (part)	5.0	County	Prescott and Russell	67,404.94
651	Highway 16 to County Road No. 18	4.5	Oxford-on-Rideau	Leeds and Grenville	2,718.03
654	Second Line Road	6.65	Sherbrooke South	Lanark	163,551.75
655	Crow Lake easterly	4.0	Oso	Frontenac	9,984.68
656	Caderette Corners–Highway No. 64	4.15	Caldwell	Nipissing	6,994.92
657	Minden Bay Road	3.75	Sherborne et al	Haliburton	110,130.60
658	Carnavon to Quinn's Corners	3.0	Minden and Stanhope	Haliburton	6,397.67
659	Ninth Line Road	12.0	Dummer	Peterborough	155,528.92
666	Sixth Line Road	8.0	Douro	Peterborough	331,006.07
667	Seeley–Brunel Road	3.7	Brunel	Muskoka	115,760.60
668	Panmure–Highway No. 44	4.5	Huntley	Carleton	97.56
669	Brussels to Highway No. 86	6.25	County	Huron	243,210.53
670	Seaforth to Brussels	15.0	County	Huron	106,400.74
671	Black Bridge–Mathiasville	3.25	Draper	Muskoka	162,447.49
672	Provost Corners northerly	3.5	Marmora and Lake	Hastings	20,621.74
673	Concession II Road	1.5	Cramahe	Northumberland and Durham	132,727.86
674	Hanover–Chesley	9.0	County	Bruce	397,883.17
675	Otter Lake northerly	2.7	Loughborough	Frontenac	31,055.91
676	River Road	13.8	County	Renfrew	111,517.55
678	County Road No. 18, Hwy. 401, northerly	2.25	County	Northumberland and Durham	173,215.91
680	Killbear Park Road	5.6	Carling	Parry Sound	228,910.32
681	Thickson Road (part)	6.3	County	Ontario	187,683.69
682	Highway 402–County Road No. 4	2.25	Sarnia	Lambton	328,559.16
683	Lincoln/Welland	14.4	County	Lincoln and Welland	319,388.97
684	County Road No. 9, Highway 24 S.	8.4	County	Norfolk	146,225.58

687DR	Paincourt easterly	1.0	Dover	Kent	9,224.48
689	Younge Boundary to Highway 29	7.0	Elizabethtown	Leeds and Grenville	18,225.01
690	Bowens Corners southerly	0.4	Dungannon	Hastings	11,633.55
691	Golf Links Road Extension	0.75	Shuniah	Thunder Bay	19,143.91
692	County Road No. 36 (part)	4.2	County	Elgin	29,146.00
693	Back Road	6.0	Tisdale	Cochrane	451,068.21
694	Wooler Road	4.4	County	Northumberland and Durham	123,658.68
695	County Road No. 17 (part)	9.2	County	Simcoe	558,384.88
696	Beaver Creek Bridge		Limerick	Hastings	39,869.78
697	County Road No. 1 (part)	10.0	County	Kent	146,228.28
698	Old Garden River Road	2.8	Tarentorus	Algoma	85,044.76
700P.E.	Stoney Lake North Shore Road	5.5	Burleigh	Peterborough	2,019.65
701	County Road No. 3–Mud Lake I. R.	2.7	Smith	Peterborough	109,672.80
702	Coopers Falls–Housey Rapids	5.0	Ryde	Muskoka	111,061.30
703	Healey's Falls Road	4.4	Seymour	Northumberland and Durham	225,877.07
704	Roseneath easterly	2.9	Alnwick	Northumberland and Durham	11,556.33
705	Concession V/VI Road	1.8	Kitley	Leeds and Grenville	7,319.60
706P.E.	Base Line Road	5.4	Darlington	Northumberland and Durham	1,034.97
707	Concession IV/V Road	5.4	Hagar	Sudbury	96,035.71
708	Burk's Falls easterly and southerly	2.0	Armour	Parry Sound	24,854.52
709	Machar Lake Bridge		Machar	Parry Sound	81,619.02
711P.E.	County Road No. 4, Frankford–Hwy. 401	5.1	County	Hastings	8,324.31
712	County Road No. 65	4.7	County	Wellington	205,218.36
713	Dean Lake Bridge		Thompson	Algoma	2,033.83
714	Birch Creek Bridge		Hallam	Sudbury	265.79
716	County Road No. 6–Hwy. 23–19	8.0	County	Perth	272,218.12
717	River Road	3.9	North Gower	Carleton	162,121.11
718	Bobcaygeon to Fenelon Falls	9.5	County	Victoria	48,624.79
719	Lots 12/13, Concession II–VIII	6.0	Mountain	Stormont, Dundas and Glengarry	162,992.01
720	Highway 588 northerly to Concession V/VI	0.85	Gillies	Thunder Bay	30,463.09
721	County Road No. 18 and 5 (part)	4.0	County	Grey	171,628.58
722	County Road No. 7 (part)	7.0	County	Stormont, Dundas and Glengarry	329,945.95
724	County Road No. 12 and 6A	6.5	County	Middlesex and Lambton	632,461.00
725P.E.	Lots 6/7, Concession B, A and 1	2.8	Murray	Northumberland	3,360.00
726P.E.	County Road No. 58 (part)	4.4	County	Wellington	800.00
727	County Road No. 69 (part)	2.9	County	Wellington	69,625.67
728	Township Boundary westerly to Oakleaf	1.1	Rear of Leeds and Lansdowne	Leeds and Grenville	34,186.62
729	County Road No. 5B westerly to Twp. Bdry.	0.9	Rear of Yonge and Escott	Leeds and Grenville	14,043.46
730	Granton northerly to Twp. Boundary	1.0	Biddulph	Middlesex	17,527.99
731	County Road No. 5 (part)	2.9	County	Lennox and Addington	9,200.67
732	Centreville–Highway 401	10.8	County	Lennox and Addington	372,490.58
733P.E.	Tri County Bridge to Hwy. 21	3.7	Bosanquet	Lambton	4,932.07
734P.E.	Stephen/McGillivary Townline	3.0	McGillivary and Stephen	Middlesex and Huron	2,154.28
735	County Road No. 31 (part)	9.5	County	York	130,251.43
737P.E.	Highway No. 6 to Victoria Bridge	2.2	Guelph	Wellington	1,673.95
737P.E.	Concession XII/XIII Road	1.25	Chisholm	Nipissing	4,931.42
738	Hardwood Lake–Palmer Rapids	7.0	Raglan	Renfrew	48,910.74
739	Sideroad 6/7	3.5	South Gower	Leeds and Grenville	9,951.64
740	Balsam Lake–Jones Boundary	4.3	Bangor, Wicklow and McClure	Hastings	195,009.24

Road No.	Description or Location	Length Miles	Jurisdiction (Township unless otherwise indicated)	County or District	Expenditure 1964-65
741	County Road No. 15, Pakenham–Waba	9.5	County	Lanark	297,321.38
743P.E.	Trout Lake Road	4.5	East Ferris	Nipissing	6,101.23
744P.E.	Twentieth Sideroad	5.1	Albion	Peel	10,123.55
745	County Road No. 5 (part)	5.6	County	Peterborough	356,094.13
746	County Road No. 15	13.0	County	Prince Edward	388,063.59
747	Alice–Petawawa Townline	5.0	Alice, Fraser and Petawawa	Renfrew	37,265.65
748	Flinton to Hastings Boundary	3.8	Kaladar, Anglesea and Effingham	Lennox and Addington	62,748.78
749	Point Des Chenes Park Road	2.88	Korah	Algoma	120,776.36
752	County Road 12M/12N, Old Indian Line	5.2	County	Haldimand	224,823.61
753	Concession II/III Road	5.0	Dack	Temiskaming	36,258.85
754	Dwyer Hill Road	6.9	Goulbourn	Carleton	92,388.46
755	Concession XVI/XVII	1.8	Nipissing	Parry Sound	30,911.35
756P.E.	Proposed Kent County Road	4.5	County	Kent	12,393.54
757	Dilke/Nelles Boundary Road	7.0	Dilke	Rainy River	45,234.77
758	County Road No. 3 (part)	12.3	County	Bruce	155,938.62
759P.E.	County Road No. 4 (part)	10.1	County	Huron	16,241.41
760P.E.	10th Sideroad	11.6	Tecumseth	Simcoe	22,684.49
761P.E.	Dorland–Sir John A. Macdonald's Monument	3.75	Adolphustown	Lennox and Addington	1,816.73
762	Rotary Beach Road	1.2	Chaffey	Muskoka	36,771.73
763	Concession V/VI Road (part)	1.0	North Fredericksburgh	Lennox and Addington	33,952.64
764	Dawson Point Road (part)	1.0	Dymond	Temiskaming	14,153.88
765	County Road No. 16A (part)	3.5	Howe Island	Frontenac	87,267.41
766	Gillies Mill Road	3.2	McNab	Renfrew	96,567.03
767	Shannon's Bridge and approaches	.....	Casey and Brethour	Temiskaming	17,498.49
768P.E.	Brinston Easterly Road	3.8	Matilda	Stormont, Dundas and Glengarry	3,755.43
769P.E.	County Road No. 21 (part)	5.2	County	Ontario	11,804.04
770	St. David's Road (part)	0.5	Niagara	Lincoln	83,139.32
771P.E.	Kennebec Twp. Road (part)	2.7	Kennebec	Frontenac	2,305.79
773	County Road No. 2 (part)	16.0	County	Prescott and Russell	13,119.60
774P.E.	County Road No. 9 (part)	6.8	County	Frontenac	14,875.24
775P.E.	County Road No. 28 (part)	5.6	County	Victoria	8,438.26
776	Coon Road (part)	0.8	Niagara	Lincoln	95,788.50
777P.E.	County Road No. 10 (part)	8.0	County	Dufferin	16,557.39
778	Calvin/Papineau Townline (part)	1.2	Calvin and Papineau	Nipissing	16,654.61
779P.E.	Black Creek Road	6.0	Lavant	Lanark	2,328.98
780P.E.	March/Torbolton Townline (part)	1.2	Torbolton and March	Carleton	749.74
781P.E.	Concession II/III (part)	2.5	McKillop	Huron	253.73
782P.E.	Powassan–Rutherglen Road (part)	3.6	Bonfield	Nipissing	4,525.00
783P.E.	County Road No. 13	25.0	County	Grey	29,631.68
784	Aunor–Delnite Road (part)	0.6	Tisdale	Cochrane	17,011.21
785P.E.	Griffin's Corners easterly	3.5	Bayham	Elgin	7,398.44
786P.E.	Lackey Creek Bridge and approaches	0.08	Griffith and Matawatchan	Renfrew	408.33
787P.E.	South Chippawa Road	10.1	Caistor	Lincoln	4,325.30
788P.E.	County Road No. 24 (part)	9.4	County	Stormont, Dundas and Glengarry	2,057.07
789P.E.	County Road No. 18	6.2	County	Prescott and Russell	2,935.31
790P.E.	Concession X/XI (part)	0.7	Joly	Parry Sound	481.76
792	County Road 5A–Mallorytown Landing Rd.	2.1	County	Leeds and Grenville	14,075.16
	Totals	976.70			$14,454,988.59

APPENDIX No. 13

Types of Surface on the King's Highways

As of March 31, 1965

County or District	Concrete	High Class Bituminous	Low Class Bituminous	Gravel	Total
Algoma	.....	321.5	105.7	48.5	475.7
Brant	8.8	67.7	9.6	.....	86.1
Bruce	5.5	119.1	25.8	17.6	168.0
Carleton	12.1	126.2	.....	.....	138.3
Cochrane	.....	315.3	86.5	9.5	411.3
Dufferin	0.8	76.2	1.0	3.8	81.8
Elgin	36.7	108.3	.....	.....	145.0
Essex	47.2	152.0	25.4	.....	224.6
Frontenac	5.0	125.8	47.0	.....	177.8
Grey	4.9	130.3	.....	11.2	146.4
Haldimand	.....	71.7	2.3	.....	74.0
Haliburton	.....	50.1	66.5	.....	116.6
Halton	17.0	90.0	.....	.....	107.0
Hastings	4.8	150.0	87.7	.....	242.5
Huron	.....	203.1	.....	.....	203.1
Kenora	.....	305.6	40.8	153.4	499.8
Kent	53.1	158.5	.....	.....	211.6
Lambton	28.8	156.9	.....	4.7	190.4
Lanark	.....	114.3	10.2	.....	124.5
Leeds and Grenville	28.8	200.0	15.8	.....	244.6
Lennox and Addington	20.7	76.6	47.9	6.7	151.9
Lincoln	7.4	71.6	.....	.....	79.0
Manitoulin	.....	4.2	19.1	30.2	53.5
Middlesex	14.4	198.1	.....	12.6	225.1
Muskoka	.....	146.6	42.1	.....	188.7
Nipissing	9.7	197.2	119.8	49.4	376.1
Norfolk	.....	94.1	3.9	.....	98.0
Northumberland and Durham	.....	252.9	13.7	6.3	272.9
Ontario	11.7	130.1	15.0	6.6	163.4
Oxford	4.2	131.9	.....	5.8	141.9
Parry Sound	.....	136.9	42.4	12.8	192.1
Peel	11.1	97.4	11.4	4.2	124.1
Perth	.....	130.5	.....	.....	130.5
Peterborough	6.0	70.0	28.1	20.0	124.1
Prescott and Russell	.....	103.8	2.0	.....	105.8
Prince Edward	.....	56.6	10.9	.....	67.5
Rainy River	.....	74.6	50.8	10.0	135.4
Renfrew	.....	199.9	91.2	9.0	300.1
Simcoe	5.8	298.3	7.9	4.3	316.3
Stormont, Dundas and Glengarry	43.0	159.8	11.0	.....	213.8
Sudbury	.....	163.1	27.1	212.1	402.3
Temiskaming	.....	162.3	92.9	17.0	272.2
Thunder Bay	.....	605.8	20.9	18.1	644.8
Victoria	.....	106.5	43.0	8.2	157.7
Waterloo	10.3	77.4	.....	5.7	93.4
Welland	30.0	83.9	0.6	.....	114.5
Wellington	10.4	146.2	.....	12.5	169.1
Wentworth	2.1	121.4	25.9	.....	149.4
York	4.4	161.6	23.5	.....	189.5
Totals	444.7	7,301.9	1,275.4	700.2	9,722.2

APPENDIX No. 14

Summary of King's Highway Mileages by Highway Districts

As of March 31, 1965

District	Concrete	High Class Bituminous	Low Class Bituminous	Gravel	Total
Chatham	129.1	465.4	25.4	4.7	624.6
London	72.7	532.2	3.9	12.6	621.4
Stratford	6.7	567.1	.....	28.7	602.5
Hamilton	53.9	493.6	38.4	.....	585.9
Owen Sound	17.0	465.9	27.6	36.4	546.9
Toronto	35.2	367.3	57.0	.....	468.5
Port Hope	6.0	573.2	73.6	41.1	693.9
Kingston	52.3	514.8	83.1	6.7	656.9
Ottawa	62.1	549.0	39.0	.....	650.1
Bancroft	.....	120.4	280.7	18.3	419.4
Huntsville	.....	363.7	129.9	12.8	506.4
North Bay	9.7	309.5	82.1	56.1	457.4
New Liskeard	.....	228.2	173.8	74.4	476.4
Cochrane	.....	296.6	11.3	9.5	317.4
Sudbury	.....	255.0	31.4	68.4	354.8
Sault Ste. Marie	.....	306.6	105.7	149.0	561.3
Fort William	.....	574.2	20.9	28.1	623.2
Kenora	.....	310.2	91.6	153.4	555.2
Totals	444.7	7,301.9	1,275.4	700.2	9,722.2

APPENDIX No. 15

Types of Surface on Secondary Highways

As of March 31, 1965

County or District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
Algoma	9.4	39.2	267.5	.....	316.1
Cochrane	1.0	47.5	121.3	.....	169.8
Frontenac	.....	10.3	23.7	.....	34.0
Haliburton	6.1	51.3	45.7	.....	103.1
Hastings	3.1	16.8	21.0	.....	40.9
Kenora	8.8	8.2	158.4	.....	175.4
Lanark	.....	14.0	.....	.....	14.0
Lennox and Addington	6.2	.....	6.5	.....	12.7
Manitolin	.....	40.4	127.3	.....	167.7
Muskoka	7.7	66.4	25.1	.....	99.2
Nipissing	2.6	22.5	71.4	.....	96.5
Parry Sound	.....	120.0	114.7	.....	234.7
Peterborough	.....	25.7	44.3	.....	70.0
Rainy River	.....	10.5	217.3	.....	227.8
Renfrew	8.8	60.9	48.7	.....	118.4
Sudbury	73.0	19.9	201.0	.....	293.9
Temiskaming	7.2	50.2	154.1	.....	211.5
Thunder Bay	17.0	15.4	425.1	2.4	459.9
Victoria	5.1	23.1	38.4	.....	66.6
Totals	156.0	642.3	2,111.5	2.4	2,912.2

APPENDIX No. 16

Summary of Secondary Highway Mileages by Highway Districts

As of March 31, 1965

District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
Port Hope	.....	37.1	59.9	.....	97.0
Kingston	8.7	6.3	6.8	.....	21.8
Ottawa	.....	44.5	.....	.....	44.5
Bancroft	7.8	58.9	129.0	.....	195.7
Huntsville	18.9	200.7	131.9	.....	351.5
North Bay	4.2	74.6	130.2	.....	209.0
New Liskeard	7.9	94.6	270.4	.....	372.9
Cochrane	0.3	3.1	144.3	.....	147.7
Sudbury	73.0	50.0	301.4	.....	424.4
Sault Ste. Marie	14.6	38.4	193.2	.....	246.2
Fort William	11.8	25.9	406.6	2.4	446.7
Kenora	8.8	8.2	337.8	.....	354.8
Totals	156.0	642.3	2,111.5	2.4	2,912.2

APPENDIX No. 17

Types of Surface on Tertiary Roads

As of March 31, 1965

County or District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
Kenora	.....	.....	12.8	.....	12.8
Nipissing	.....	.....	35.0	.....	35.0
Sudbury	4.2	.....	.....	.....	4.2
Thunder Bay	.....	.....	71.3	.....	71.3
Totals	4.2	.....	119.1	.....	123.3

APPENDIX No. 18

Summary of Tertiary Road Mileages by Highway Districts

As of March 31, 1965

District	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
North Bay	.....	.....	35.0	.....	35.0
Sudbury	4.2	.....	.....	.....	4.2
Fort William	.....	.....	71.3	.....	71.3
Kenora	.....	.....	12.8	.....	12.8
Totals	4.2	.....	119.1	.....	123.3

APPENDIX No. 19

Road Mileages in Ontario

As of March 31, 1965

	Total Miles	Type of Pavement					
		Concrete	High Class Bituminous	Low Class Bituminous	Gravel	Earth	Total
King's Highways	9,722.2	444.7	7,301.9	1,275.4	700.2	.....	9,722.2
Secondary Hwys	2,912.2	.....	156.0	642.3	2,111.5	2.4	2,912.2
Tertiary Roads	123.3	.....	4.2	.....	119.1	.....	123.3
Totals	12,757.7	444.7	7,462.1	1,917.7	2,930.8	2.4	12,757.7

APPENDIX 20

Schedule of Controlled-Access Highways
April 1, 1964 to March 31, 1965

Hwy. No.	Name or Location	Designated by Ontario Regulation Number	Mileage
7 T.C.	Peterborough By-pass (Twp. of Otonabee)	320/64	5.60
11, 17, 61	Lakehead Expressway	235/64	16.76
12 T.C.	Beaverton By-pass	194/64	6.55
17	Ottawa to Antrim	173/64	21.30
401	Gananoque to Brockville (Twps. of Yonge and Elizabethtown)	29/65	6.30
403	Toronto to Woodstock (Town of Burlington)	155/64	3.34
406	Welland to St. Catharines (Twp. of Thorold and City of Welland)	217/64	8.83
407	Langstaffe Diversion (Twp. of Markham)	241/64	8.07
	Total Mileage		76.75

APPENDIX 21

Schedule of Designations and Re-Designations of Sections of King's Highway, Secondary Highway and Tertiary Road Systems for the Fiscal Year Ending March 31, 1965

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-3099-2	28, Range 15	June 3/64	17 T.C.	6.840
	P-7151	Striker	Oct. 8/64	538	0.550
Carleton	P-1648-8	March	April 23/64	17 T.C.	2.800
	P-1696-40	Goulbourn	April 23/64	7 and 15 T.C.	0.700
	P-1770-20	Huntley	April 23/64	17 T.C.	13.500
	P-1870-48	Nepean	April 23/64	17 T.C.	4.300

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Cochrane	P-2213-37	Glackmeyer and Lamarche	April 9/64	11	5.200
	P-2214-34	Hanna	April 9/64	11	6.100
	P-2434-23	Shackleton	April 3/64	11	9.000
	P-3256-5	Hislop, Guibord	Jan. 21/65	572	5.300
	P-7129-2	Godfrey, Jamieson, Robb	Aug. 20/64	576	12.940
Dufferin	P-2354-12	Mono	April 3/64	9	5.090
Durham	P-2553-33	Manvers	Oct. 22/64	7A	4.100
	P-2954-42	Cavan	Oct. 8/64	28	3.540
Elgin	P-2058-86	Yarmouth	Jan. 14/65	3	5.560
Essex	P-2956-29	Maidstone	Jan. 14/65	401	
	P-2959-75	Sandwich S.	Jan. 14/65	401	
Haldimand	P-2046-19	Walpole	July 16/64	6	5.000
	P-2464-58	Oneida	June 30/64	6	7.940
	P-2955-6	N. Cayuga	July 23/64	54	0.600
Halton	P-1715-47	Esquesing	Dec. 3/64	7	8.020
	P-1756-22	Nassagaweya	Aug. 6/64	7	7.900
	P-2792-53	E. Flamboro	May. 14/64	403	3.340
	P-2842-26	Esquesing	June 3/64	25	9.700
Hastings	P-6028-10	Tyendinaga	April 9/64	41	0.800
Huron	P-1860-38	Hullett	Dec. 22/64	4	1.270
	P-2011-30	Hullett and Tuckersmith	Dec. 22/64	8	5.480
	P-2402-21	Hay	Jan. 7/65	84	2.860
Kenora	P-2665-11	Bridges	July 23/64	17 T.C.	6.100
	P-3242-8	Block 10, Grand Truck, Pacific	April 3/64	642	7.320
	P-8094-1	Drayton and Grand Truck, Pacific, Block 10	Dec. 17/64	642	4.000
Leeds	P-6036-3	Yonge and Elizabethtown	Jan. 7/65	401	6.300
Lennox and Addington	P-6032-10	Ernestown	Mar. 11/65	133	6.200
Lincoln	P-1799-35	Gainsborough	May 21/64	57	2.900
	P-5068-1	City of St. Catharines and Niagara Twp.	Feb. 4/65	Carlton St. Tunnel	1.130
Middlesex	P-1618-39	McGillivray, London and Biddulph	Jan. 7/65	7	3.260
	P-4023-5	London	May 28/64	126	0.152
Nipissing	P-2124-44	Widdifield	Feb. 18/65	11	8.340
	P-2219-16	Kirkpatrick	Nov. 19/64	17	6.240
	P-2260-4	Pedley	Nov. 12/64	17	6.050
	P-2301-59	Bonfield	April 3/64	17	9.610
	P-2436-25	Caldwell	Nov. 5/64	17	2.610
	P-2503-12	Merrick	Oct. 22/64	11	3.860
	P-2507-12	Blyth	Aug. 20/64	11	4.320
	P-2518-11	Notman	Sept. 17/64	11	4.050
	P-2525-14	Lyman	Oct. 22/64	11	3.710

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
	P-2559-19	Gladman	Oct. 22/64	11	6.210
	P-2577-17	Sisk	Feb. 18/65	11	6.250
	P-2579-6	McLaren	Aug. 20/64	11	2.080
	P-2590-5	Olive	Feb. 25/65	11	6.550
	P-2739-75	East Ferris	Dec. 22/64	17	7.510
	P-3442-10	Peck	June 3/64	60	10.230
Norfolk	P-1713-10	Woodhouse	Aug. 13/64	6	6.070
	P-1864-21	Townsend	April 3/64	3	4.470
	P-1864-22	Townsend	April 3/64	3	3.860
Northumberland	P-1761-28	Seymour	June 3/64	30	3.500
	P-1761-29	Seymour	June 3/64	30	9.760
	P-2064-36	Hope	May 21/64	28	4.950
	P-2515-21	Alnwick	Aug. 20/64	45	2.060
	P-2839-25	Hamilton	Sept. 24/64	45	5.120
Ontario	P-1601-30	Brock	May 21/64	12 T.C.	0.750
	P-1601-32	Brock	Dec. 3/64	7 and 12	12.040
	P-1605-33	Thorah	June 11/64	12 T.C.	5.800
	P-2778-7	Brock, Thorah	Feb. 18/65	48	5.300
Parry Sound	P-2130-74	S. Himsworth	Jan. 21/65	11	7.330
	P-2510-48	Humphry	Nov. 19/64	532	10.160
	P-3237-7	Chapman	Nov. 26/64	124	1.980
	P-3314-13	S. Himsworth	Feb. 4/65	522	3.450
	P-7128-1	Wallbridge	April 1/64	645	2.440
	P-7146	Nipissing	Sept. 24/64	654	7.500
	P-7147	N. Himsworth	Oct. 8/64	654	6.500
Peel	P-1899-44	Chinguacousy	Mar. 4/65	7	5.200
	P-2002-58	Chinguacousy	Feb. 25/65	10	10.000
	P-5001-11	Toronto Gore	Feb. 25/65	50	6.070
Perth	P-1958-26	Blanshard	Sept. 17/64	7	6.960
	P-2198-25	Fullarton	Sept. 17/64	23	8.020
	P-2212-36	Mornington	Sept. 17/64	19	9.970
	P-2673-18	Wallace and Elma	Nov. 5/64	86	8.000
	P-2746-13	S. Easthope	Sept. 17/64	59	2.880
	P-2765-5	Blanshard	Aug. 6/64	19	1.333
	P-2868-9	Maryborough and Mornington	Oct. 22/64	86	6.920
	P-2917-3	Fullarton	July 9/64	83	1.970
Peterborough	P-1789-85	Otonabee	Oct. 1/64	7 T.C.	5.600
	P-2416-40	Harvey	April 30/64	36	4.200
	P-2416-41	Harvey	April 30/64	36	6.340
	P-2416-42	Harvey	April 30/64	36	6.170
	P-2416-43	Harvey	April 30/64	36	5.510
	P-2520-22	Asphodel	April 9/64	45	4.630
	P-2954-42	N. Monaghan (see Durham Co.)	Oct. 8/64	28	
	P-2960-7	Belmont	April 3/64	30	2.530
Prince Edward	P-2050-11	Ameliasburgh	May 14/64	33	4.380
	P-2089-7	N. Marysburgh	July 30/64	33	1.330
	P-2805-18	Sophiasburgh	Sept. 3/64	41	6.050
Rainy River	P-2112-6	Devlin	Mar. 11/65	11	6.500
	P-2288-26	Morley	Mar. 11/65	11	5.600
	P-2300-15	Atwood	Jan. 14/65	11	1.400
	P-2650-12	Worthington	Jan. 28/65	11	6.000

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Renfrew	P-2221-49	Buchanan	Dec. 22/64	17	4.010
	P-2585-23	Head	Nov. 5/64	17	13.250
Simcoe	P-2145-24	W. Gwillimbury	Oct. 14/64	11	0.400
	P-2145-26	W. Gwillimbury	Jan. 14/64	11	6.180
Sudbury	P-2101-18	Ratter and Dunnet	Jan. 21/65	17	6.170
	P-2132-46	Garson	Mar. 4/65	541A	1.420
	P-2168-81	Dowling	July 23/64	544	9.200
	P-2185-12	Falconbridge	Mar. 4/65	541A	0.130
	P-2241-26	Awrey	Jan. 7/65	17	6.570
Temiskaming	P-7123-2	Otto	July 23/64	650	0.860
	P-7136-1	Boston	July 23/64	650	3.850
Thunder Bay	P-8069-1	Neebing and City of Fort William	Sept. 11/64	(Lake'd Ex.)	4.400
	P-8070-2	McIntyre and MacGregor and City of Port Arthur	Sept. 11/64	(Lake'd Ex.)	12.360
	P-8070-3	McIntyre	Sept. 3/64	(Lake'd Ex.)	2.130
	P-8093	Pardee	April 9/64	593	5.000
Victoria	P-1936-63	Fenelon	Oct. 22/64	35	13.730
	P-2098-39	Fenelon	Nov. 12/64	36	2.460
	P-2147-10	Somerville	July 23/64	35	5.820
	P-2448-24	Bexley	May 21/64	46	6.480
	P-2527-54	Eldon	Aug. 20/64	46	17.650
	P-2720-8	Bexley	July 30/64	35	2.690
	P-2921-6	Laxton	July 30/64	35	6.100
	P-3483-2	Fenelon	May 21/64	121	4.050
	P-5022-4	Digby	Jan. 28/65	503	4.360
	P-5062	Fenelon	June 18/64	35A	1.920
Waterloo	P-1812-24	N. Dumfries	May 21/64	8	2.370
Welland	P-1819-27	Thorold	Aug. 6/64	20	5.900
	P-2043-26	Thorold	Feb. 4/65	58	1.500
	P-2043-27	Thorold	Feb. 4/65	58	1.630
	P-5045-2	Thorold	June 18/64	406	8.830
Wellington	P-1643-47	Puslinch	June 3/64	6	9.040
	P-1756-22	Eramosa (see Halton Co.)	Aug. 6/64	7	
	P-1903-19	Guelph	Aug. 20/64	7	2.690
Wentworth	P-1566-23	E. Flamboro	June 18/64	5	3.150
	P-1750-16	Beverly	May 7/64	5	4.780
	P-1750-17	Beverly	May 7/64	5	4.570
	P-1782-64	Saltfleet	Sept. 17/64	8	6.250
	P-1790-58	Saltfleet	Sept. 3/64	20	2.840
	P-1853-12	Ancaster	April 9/64	53	5.000
	P-1930-24	W. Flamboro	May 7/64	5	3.250
	P-1930-25	W. Flamboro	May 14/64	5	4.800
	P-1977-68	Glanford	Feb. 18/65	6	4.780
	P-3400-13	Saltfleet	Aug. 13/64	53	2.260
York	P-5001-11	Vaughan (see Peel Co.)	Feb. 25/65	50	
	P-5052-2	Markham	Aug. 13/64	407	8.070

APPENDIX 22

Schedule of Reversions and Transfers of Sections of the King's Highway and Secondary Highway Systems for the Fiscal Year Ending March 31, 1965

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2400-25	Village of Iron Bridge	April 11/64	17 T.C.	2.500
Carleton	P-1591-71	Nepean	Dec. 22/64	16	0.100
Durham	P-2390-33	Clarke	April 1/64	35	0.260
Elgin	P-2058-84	City of St. Thomas	April 1/64	3	0.960
	P-2058-85	Yarmouth	April 1/64	3	0.450
	P-2627-26	Malahide	April 1/64	3	0.280
Essex	P-3367-20	Sandwich W.	April 1/64	3B	0.720
Frontenac	P-1877-31	Olden	July 3/64	7 T.C.	0.020
	P-1877-32	Olden	Nov. 22/64	7 T.C.	0.660
	P-2398-43	Kingston	Dec. 26/64	38	1.700
	P-3036-99	Kingston	April 23/64	401	0.800
Grenville	P-2818-68	Town of Prescott	Feb. 18/65	401	0.030
Haldimand	P-2464-59	Oneida	Nov. 7/64	6	0.680
Haliburton	P-3259-4	Cardiff	July 18/64	Bicroft Mine Rd.	0.950
Halton	P-1959-59	Town of Oakville	Feb. 13/65	2	1.050
Hastings	P-1953-33	Village of Frankford	May 30/64	33	0.320
	P-1976-29	Tyendinaga	Dec. 17/64	2	0.020
	P-2563-27	Thurlow	June 18/64	14	0.400
	P-3463-21	Mayo	July 25/64	500	0.780
	P-3463-29	Mayo	Dec. 17/64	500	0.450
Huron	P-2225-20	Colborne	Nov. 7/64	21	0.940
	P-2402-20	Hay	April 1/64	74	0.540
Kenora	P-2223-16	Sanford	April 1/64	17 T.C.	0.020
	P-2295-13	Town of Keewatin	Nov. 21/64	17 T.C.	2.080
	P-2603-17	Town of Kenora	Sept. 12/64	17 T.C.	2.670
Kent	P-2442-14	Mersea and Romney	April 25/64	3	0.270
Lambton	P-2110-58	Bosanquet	June 13/64	21	0.950
	P-2311-53	Village of Point Edward	Oct. 31/64	402	0.056
Lanark	P-1832-23	Town of Smiths Falls	Mar. 20/65	43	0.200
Leeds	P-1581-9	South Elmsley	Feb. 18/65	29	0.240
Lennox and Addington	P-2069-69	Ernestown	April 16/64	33	0.100
	P-3173-100	Ernestown	May 9/64	401	0.240
	P-3173-107	Ernestown	Aug. 8/64	401	0.600
Middlesex	P-2973-8	Brooke, Mosa and Metcalfe	May 23/64	80	4.960

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Muskoka	P-3300-33	Monck and Macaulay	June 20/64	532	0.010
Nipissing	P-2108-47	Papineau	Nov. 7/64	17	2.630
Ontario	P-1922-47	Pickering	April 18/64	2	0.570
	P-2735-10	Uxbridge	Oct. 24/64	47	0.300
Parry Sound	P-3314-10	S. Himsworth	April 1/64	522	0.410
Peel	P-2093-51	Albion	Nov. 21/64	50	1.100
Peterborough	P-1965-8	N. Monaghan	April 25/64	7A	0.940
	P-2954-39	N. Monaghan	April 25/64	28	2.260
	P-3247-5	Chandos	May 9/64	620	1.300
	P-3295-50	N. Monaghan	May 16/64	7 T.C.	0.910
Renfrew	P-2128-83	Rolph	Sept. 5/64	17	0.050
	P-2585-20	Head	June 6/64	17	0.080
	P-2799-5	Allice and Stafford	Sept. 5/64	62	0.150
	P-2902-18	Village of Barry's Bay	May 9/64	60	0.300
Simcoe	P-1834-33	Tiny and Tay	July 18/64	27	0.270
	P-1904-55	Nottawasaga	Oct. 3/64	26	0.021
Sudbury	P-2159-17	Neelon	Aug. 22/64	17	3.310
	P-2718-21	Rayside	April 1 64	544	0.720
	P-2976-73	McKim	Aug. 15/64	69	1.950
	P-3261-26	Capreol	April 1/64	545	0.320
	P-7020-1	McKim	Aug. 8/64	543	0.120
Temiskaming	P-2957-27	Dymond	April 1/64	65	0.570
Thunder Bay	P-2763-35	Pardee	April 11/64	61	1.560
	P-2986-52	Dorion	April 1/64	17 T.C.	4.750
	P-3125-20	City of Fort William	July 11/64	61	1.500
Waterloo	P-1417-59	Waterloo	April 1/64	8	0.500
	P-1417-63	Waterloo	Sept. 5/64	8	0.050
	P-1417-64	Waterloo	July 16/64	8	0.450
	P-1688-17	Waterloo	Jan. 21/65	24	0.419
Welland	P-2425-93	Stamford	June 25/64	Rainbow Br. Cut-off	1.178
Wentworth	P-1411-26	Ancaster	April 1/64	8	0.870
	P-1411-27	Ancaster	Aug. 14/64	102	0.790
	P-1640-32	W. Flamborough	April 1/64	102	1.171
	P-1651-64	Ancaster	May 4/64	2	0.050
	P-1790-56	Saltfleet	April 25/64	20	1.200
	P-2113-241	Saltfleet	July 9/64	20 Q.E.W.	3.280
	P-3213-22	Ancaster	April 1/64	99	1.155
York	P-1900-65	Whitchurch	April 18/64	11	0.580
	P-2083-156	Etobicoke	Sept. 12/64	27	0.211
	P-2735-10	Whitchurch (see Ontario Co.)	Oct. 24/64	47	
	P-3117-57	Markham	Jan. 21/65	48	1.780

APPENDIX 23

Schedule of Existing Roads Assumed as Portions of the King's Highway, Secondary Highway and Tertiary Road Systems for the Fiscal Year Ending March 31, 1965

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Algoma	P-2256-32	City of Sault Ste. Marie	Jan. 11/65	550	0.500
	P-2424-51	Tarentorus	April 24/64	17 T.C.	0.080
	P-8088-3	Tarentorus	Sept. 21/64	550	0.020
Brant	P-1833-34	S. Dumfries, Brantford	Aug. 7/64	99	0.050
Carleton	P-1591-70	Nepean and North Gower	Nov. 26/64	16	0.100
	P-2684-36	Nepean	Jan. 18/65	7 and 15 T.C.	0.010
Cochrane	P-3256-5	Hislop, Guibord	Dec. 14/64	572	5.300
	P-7129-2	Godfrey, Jamieson Robb	June 30/64	576	12.940
	P-8102-2	Kennedy	July 6/64	652	1.650
	P-8102-3	Kennedy	July 6/64	652	1.500
Dundas	P-1541-26	Village of Morrisburg	Feb. 4/65	2	0.700
Frontenac	P-1826-35	Pittsburgh	June 22/64	2	0.040
	P-1966-24	Hinchinbrooke and Bedford	Dec. 18/64	38	0.440
	P-2903-44	Wolfe Island	Jan. 18/65	.....	1.000
	P-6015-17	Barrie	Jan. 21/65	506	0.320
Grenville	P-1668-21	Edwardsburgh	May 14/64	2	0.180
Haldimand	P-2464-57	Oneida	May 26/64	6	0.136
Halton	P-1939-164	Town of Oakville	June 4/64	Q.E.W.	0.325
	P-2070-146	Town of Burlington	April 1/64	Q.E.W.	0.385
Hastings	P-2521-11	Dungannon	Dec. 10/64	500	1.140
	P-2521-12	Dungannon	Jan. 26/65	500	2.220
	P-6053	Wallaston	Mar. 31/65	504	0.570
Kenora	P-2194-14	Rugby	Nov. 12/64	605	0.200
Lennox and Addington	P-6032-11	Ernestown	Mar. 10/65	133	2.600
Lincoln	P-2116-78	Louth	May 25/64	Q.E.W.	0.180
	P-2141-140	City of St. Catharines	June 25/64	Q.E.W.	0.015
Ontario	P-1601-31	Brock, Thorah	Nov. 2/64	12 T.C.	0.440
	P-1605-32	Thorah	April 24/64	12 T.C.	5.800
	P-1605-36	Thorah	Aug. 19/64	12 T.C.	0.571
	P-1922-50	Pickering	Dec. 1/64	2	0.110
	P-2798-14	Thorah, Brock	Jan. 8/65	48	2.100
Parry Sound	P-7128	Wallbridge	April 1/64	645	2.000
	P-7146	Nipissing	Aug. 28/64	654	7.500
	P-7147	N. Himsworth	Aug. 26/64	654	6.500
Peel	P-1659-63	Toronto	June 12/64	10	0.015
	P-1857-241	Toronto	May 22/64	Q.E.W.	0.050
	P-1857-242	Toronto	June 9/64	Q.E.W.	0.038
	P-1857-246	Toronto	Sept. 3/64	Q.E.W.	0.012

County or District	Plan No.	Township	Effective Date	Hwy. No.	Miles
Peterborough	P-2313-19	Smith	April 20/64	7B	0.135
	P-6052-1	Chandos	Mar. 2/65	504	7.390
	P-6052-2	Chandos	Mar. 25/65	504	2.730
Prince Edward	P-3068-6	Hallowell	July 23/64	41	0.530
Rainy River	P-2357-3	Pattullo	May 25/64	617	0.110
Renfrew	P-6021-11	Bromley	April 30/64	60	0.920
Thunder Bay	P-2162-34	84	May 22/64	17 T.C.	0.110
Victoria	P-2448-23	Bexley	April 7/64	46	5.000
	P-2448-30	Bexley	Nov. 18/64	46	0.095
Wellington	P-1903-18	Guelph	July 27/64	7	0.076
Wentworth	P-2113-243	Saltfleet	May 25/64	Q.E.W.	0.248
	P-3213-24	Ancaster	Oct. 6/64	99	0.130
York	P-2770-533	North York	Aug. 26/64	401	0.042
	P-2948-95	Etobicoke	Oct. 30/64	401	0.120

CHRONOLOGY — DEPARTMENT OF HIGHWAYS

1964

January 3—A new controlled-access highway from Highway 401 in the vicinity of Renforth Drive, to the new Toronto International Air Terminal was opened to traffic.

January 13 First contracts for clearing the right-of-way for the Timmins-Sudbury highway were awarded.

March 16 Department of Highways estimates for 1964-65 presented to the Legislature by Hon. Charles S. MacNaughton.

May 15—Official opening ceremonies held for two miles of the Ottawa Queensway from Carling-Kirkwood interchange to Bronson Avenue.

July 27—Eight picnic areas adjacent to permanent service centres on Highway 401 were established.

July 27—The north lanes of Highway 401 from Cornwall to one mile east of Lancaster were opened for traffic.

July 29 The south lanes of Highway 401 from Highway 4 to Dutton were opened for traffic.

September 16—The south lanes of Highway 401 from Highway 2, east of Tilbury, to the Bloomfield Road interchange were opened for traffic.

September 17—A three-quarter mile section of the Ottawa Queensway from Bronson Avenue to O'Connor Street was opened for traffic.

November 6—The south lanes of Highway 401 from the Dutton sideroad to the Kent-Elgin county line were opened for traffic.

November 10—Four lanes of an eight-mile stretch of Highway 401 from Lancaster to the Quebec border were opened to traffic.

November 12—The north lanes of Highway 401 from Drummies sideroad, west of Marysville, to Highway 38 were opened to traffic.

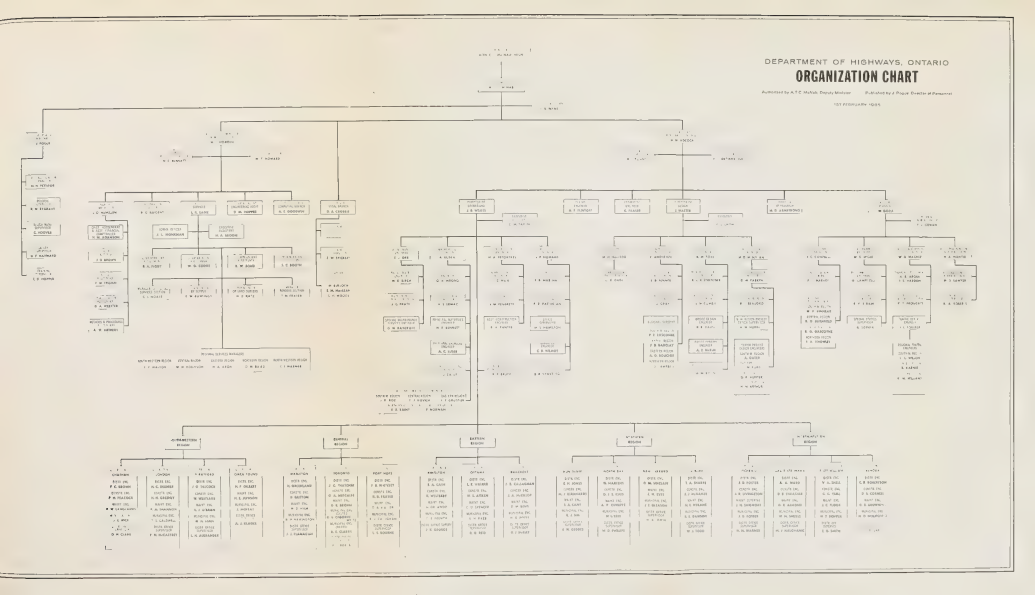
December 7 The south lanes of Highway 401 between Bloomfield Road (south of Chatham) and the interchange for Kent Centre were opened to traffic.

DEPARTMENT OF HIGHWAYS, ONTARIO

ORGANIZATION CHART

Authorized by A.T.C. McNab, Deputy Minister — Published by J. Pringle, Director of Personnel

1st February, 1965



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